THE OIL WEEKLY

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The Oil Man's Calendar

SEPT.	
8–12	American Chemical Society, Atlantic City.
17–19	National Petroleum Association, Atlantic City.
OCT.	
2– 3	West Virginia Oil & Natural Gas Association, Clarksburg.
6– 9	National Safety Congress, Chicago.
9–11	Texas Mid-Continent Oil & Gas Association, Beaumont.
16–17	American Association of Petroleum Geologists, Pacific Section, Los Angeles.
16–18	American Institute of Mining & Metallurgical Engineers, Petroleum Division, Dallas.
20–22	Independent Petroleum Association of America, Tulsa.
30–31	American Institute of Mining & Metallurgical Engineers, Petroleum Division, Los Angeles.
31	California Natural Gasoline Association, Los Angeles.
NOV.	
2– 7	American Petroleum Institute, Annual Meeting, San Francisco.
DEC.	
3	New Mexico Oil & Gas Association, Artesia.
5	Oklahoma Stripper Well Association, Tulsa.

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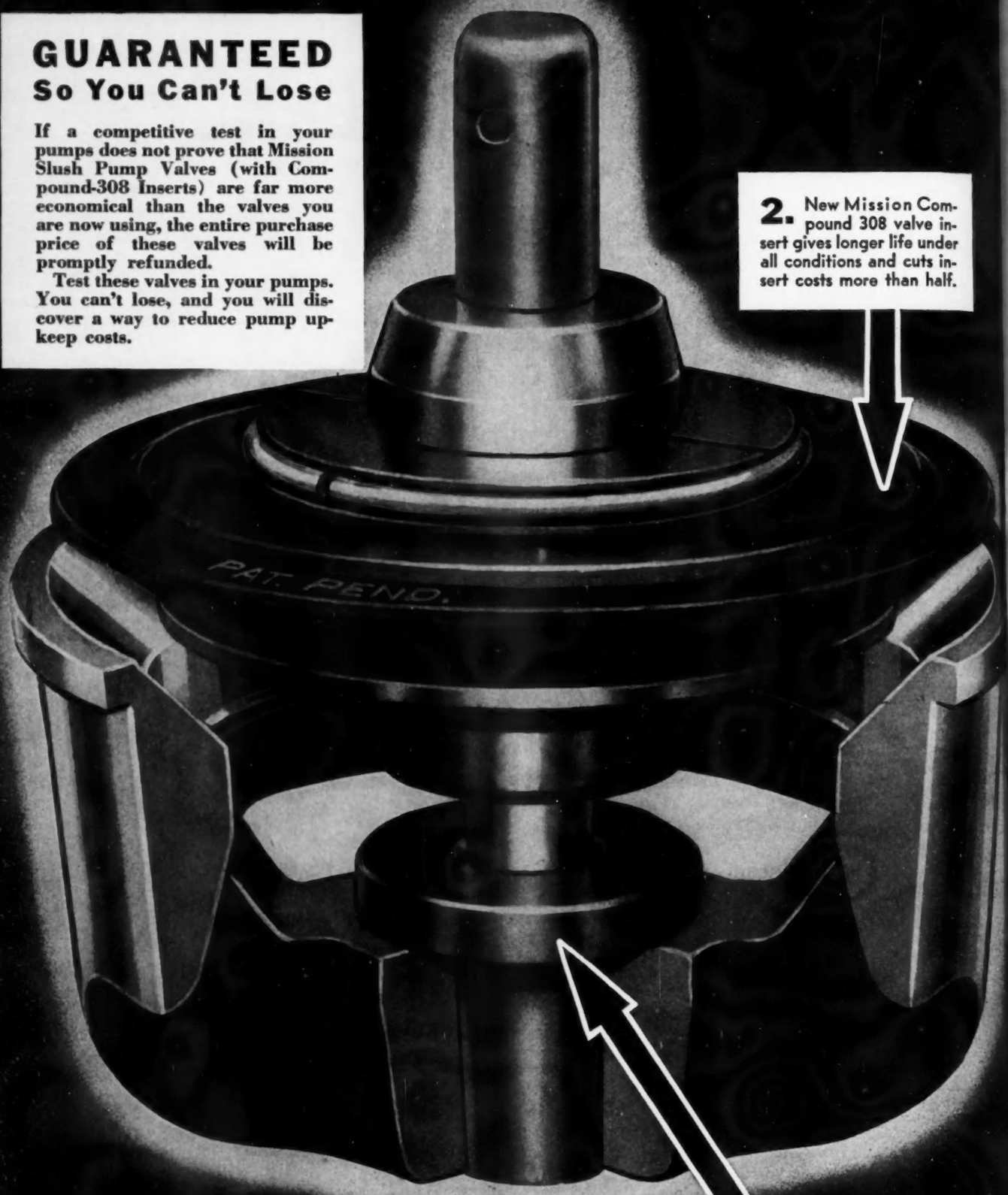

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The Changing Panorama

California Price Action Encouraging

OPACS Decision To Let Price Stand Bolsters Market Everywhere

Action of the OPACS in allowing recent crude oil price advances in California to stand, is a most encouraging development to oil producers throughout the United States. The most recent increase, put in effect late in May, was under fire of OPACS, and a great many people had the feeling that if these California advances were not allowed to stand the crude price structure throughout the country might be shaken.

Evidently OPACS, on presentation of evidence, considered the case of California operators strong enough to justify the advances. Some California producers were greatly incensed at what they considered a lack of serious consideration of the arguments presented by them at the first meeting with OPACS representatives, but now unquestionably are gratified that the final deliberation was more serious.

While the action in California cannot be said to be a blanket approval of present crude oil prices, operators who would be sunk by a reversion to old time low prices, hail it as a life saving decision.

Committees Representative . .

A study of the names selected by Coordinator Ickes to compose regional advisory committees reveals the effort that must have been exercised to assure proper representation for each of the many elements that make up the industry. The problem was made more difficulty by the fact that more than 6000 nominations for membership on the committees were sent in.

Some idea of the distribution of representation can be had from the five regional production committee groups. Here 50 representatives were divided as follows: 14 major company men, 28 smaller company men and 8 individuals. Only three companies, The Texas Company, Superior Oil Company, and Ohio Oil Company placed more than one man each on the production groups and these companies have two men each divided among the five regional committees.

Sufficient Steel . . .

A statement July 11 by the president of American Iron and Steel Institute that the crest of demand for steel had arrived or was close at hand, and that increased mill capacity will provide sufficient steel for "essential non-military uses," is welcome news to both oil operators and oil supply houses, who have been fearing a shortage of equipment necessary to conduct their business would develop in the near future. However, his is about the only encouraging statement coming out of the current debate over the adequacy of present and planned steel making capacity.

Meanwhile, defense officials in Washington have given more consideration to a supply of steel for pipe lines, tankers and other modes of transportation than to the requirements for field development. And from many sections comes reports that various field supplies, such as casing and tubing, are not available in generous quantities.

Perhaps, if time proves the Steel Institute president correct and when its supply situation becomes more acute, oil can anticipate a slackening in its dearth of raw steel as it comes under the classification of an essential non-military industry.

It would be helpful if oil operators informed both the Office of Petroleum Coordination and the OPACS in Washington of every instance in which development operations are being held up because of inability to get delivery on materials.

Equipment to Russia . . .

Drilling equipment ordered and paid for by the Russians, and in most instances already manufactured but held up on delivery by the attitude of Washington on giving licenses for export, is now being moved out of the United States rapidly.

The day the Germans invaded Russia, the State Department began releasing equipment for shipment to the Soviets and some manufacturers of oil country equipment who had completed heavy orders for the Russians, have already shipped the supplies out of their plants to Russia.

Britain Cuts Oil Rations Further

Plans Made for Policing Against Evasions and Kerosene Restriction

Great Britain's difficulty in obtaining sufficient petroleum products is illustrated by recent actions that will further reduce already drastically limited civilian consumption.

The British basic petrol ration for ordinary motorists for the next rationing period, covering August, September and October, is to be reduced by one sixth. This measure follows a similar cut of one-sixth recently made in the basic rations for commercial vehicles and cuts of from 10 to 25 percent in supplementary rations for private vehicles. At the same time, strenuous efforts are to be made by the Petroleum Department, in cooperation with police authorities to see that evasions of the rationing scheme are avoided. Eight horsepower cars are permitted 5 gallons monthly under the new regulations.

The inspectorate of the Petroleum Department is being doubled, and Scotland Yard has appointed a police superintendent to organize a detective force to trace offenders against rationing regulation. His appointment follows a recent inquiry into the possible misuse of petrol coupons.

It is difficult to say how far the present measures are prompted by a real shortage of oil products in England, or whether they are motivated by a steady press campaign against the allegedly widespread misuse for purposes wholly unconnected with the war effort.

The government also is under-

stood to have appealed to the Petroleum Board to effect a reduction in domestic consumption of kerosene in order to save shipping space. There is no official rationing scheme for kerosene, though distribution is under the sole control of the Petroleum Board, and unconfirmed reports are that supplies to wholesalers and retailers have been cut by 20 percent.

Plans for curtailment of kerosene consumption will work many hardships, as it is playing an important part in cooking and lighting operations. Evacuation of large cities has brought an influx of new residents into rural regions, many of whom are using kerosene. Consumption, according to some trade estimates, has increased from some 500,000 tons a year in peace time to over 1,000,000 tons currently.

SHAKE-OUTS
From The News

Drilling contractors have been overlooked, Chester H. Westfall, president of Mercury Drilling Company, Tulsa, told Oil Coordinator Harold L. Ickes in a telegram. He urged the coordinator to use his influence to see that drillers are permitted to obtain replacements in equipment such as drill pipe, tool joints, drill collars, chains, engines, pumps, drilling bits and wire rope, so as to prevent a bottleneck in oil production. Westfall said he spoke for not only himself but for numerous contractors of Oklahoma and Kansas concluding that 75 percent of wells drilled are by drilling contractors.

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"Regulation without representation" was the cry from East Texas independent operators following the appointment of regional industry committees for national defense coordination. They charged that the world's biggest oil field, producer of 10 percent of the United States crude production, was not represented by anyone "primarily interested" solely in the region.

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And now all welded tank cars.

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An East Texas royalty owner is suing the lease holder for $100,000, contending she failed to receive one-eighth royalty share of the "hot oil" produced from the lease and that this excessive production has shortened the life of the wells.

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Enough oil for 3000 years at the present rate of consumption could be made from the three trillion tons of United States coal reserves, if it ever becomes necessary to make oil from coal, the Bureau of Mines reports.

A hydrogenation process developed by the Bureau in one of its experimental laboratories has been tested on 13 different American coals, and has proved that crude oils, similar to crude petroleum and yielding large quantities of gasoline and other oil products, readily can be produced from all the coals tested. Tests are continuing on other important types of coal.

Total potential quantity of oil that could be produced from America's coal, based on the samples so far tested, amounts to about 3,800,000,000,000 barrels, the Bureau reports. Samples tested ranged from high-volatile bituminous coal down to the poorer quality lignites, with yields of crude oil from 168 to 78 gallons per ton of coal processed. Average yield from the total coal reserve, however, is estimated at about 50 gallons per ton, to include the quantities of coal which would have to be used for fuel and power in the processing plants.

The government experts did not estimate costs of production, but these are known to be considerably greater than the present cost of producing crude petroleum from oil fields.

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The Canadian government July 16 banned sale of gasoline and oil to motorists on Sundays, called for voluntary reduction of consumption by 50 percent, and warned that it may be necessary to resort to rationing cards. The order was issued in an effort to offset a threatened domestic shortage of 2,000,000 barrels this year that is being created by tanker losses, and to permit the transfer to Great Britain of eight oil boats. An increase of one cent a gallon in gasoline price also was authorized.

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J. C. Denton, vice president and general manager of Mid-Continent Petroleum Corporation, reports about 100 former striking members of Oil Workers International Union (CIO) will have been returned to jobs at its West Tulsa refinery by end of July. "Increased demand for products has created employment for additional men," Denton said. Workers are being re-employed on basis of seniority and ability.

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"The American public has the right to expect honesty and integrity in its public servants. Especially are these traits of extraordinary importance in times of 'emergency' if the confidence of the citizenry is to be maintained." From a published letter written to OPACS Leon Henderson by J. A. Smith, President Independent Petroleum & Consumers Association, Los Angeles.

A la Rube Goldberg . . .

The absurd height to which uninformed thinking can rise is illustrated by the suggestion of a member of the Texas legislature last week that necessity of a pipe line to the East could be obviated by linking a line of tank cars from Texas to the Atlantic Seaboard, sans locomotives, and pump oil through them from point of production to point of refining. The things the gentleman forgot or didn't know are so numerous that about the only parallel to the suggestion is the one which came during the recent Texas gubernatorial campaign about protecting our southern border by filling the Rio Grande with oil and setting fire to it!

Not because the idea would ever have even the suspicion of consideration, but to show how ignorant uninformed people can be, we offer the following information: such a procedure would require 32,000 more tank cars than there are in the United States, would tie up 1500 miles of mainline track, and because of the exceptionally low pressure that would have to be used would entitle an oil man proposing it to a choice padded cell in the state's best guarded asylum for the mentally deficient.

Syria and Oil . . .

French surrender of Syria to the British is an important victory for England from oil supply viewpoint. Earlier squelching of the German prompted Iraq revolt coupled with the recent successful conquest of Syria, removes immediate danger that Britain may lose the 25,000,000 barrels produced annually in Iraq; as it leaves Germany without any footing in closely adjoining territory in the Near East. Furthermore, the Syrian armistice means that Britain now can use both branches of the Iraq pipe line to the Mediterranean Sea. This is important to war operations in Northern Africa and the Mediterranean.

EDITORIAL COMMENT

Pipe Lines Eastward

DUE to the length of time necessary to build either one of the proposed pipe lines to the Atlantic Seaboard, it appears likely that the tanker construction program will have solved the transportation problem by the time a line or lines could be finished —unless—and there's the rub, there are more sinkings.

Nobody knows when the radio will bulletin the report of an American tanker sunk in coast-wise traffic. And we all have a pretty good idea that if we get into a shooting war, an attempt will be made on our coastwise traffic. Of course the odds will be on the side of the defense of the tankers, because a constant airplane patrol can be maintained over them—but nevertheless, in the minds of many, insurance against contingencies requires the construction of a pipe line to the East.

It is not surprising that there should be differences of opinion with reference to the kind of line to construct eastward. Some companies have large refining capacity in the East and not so much in the Southwest. Tankers carrying crude oil are just as susceptible to sinking as those loaded to refined products. These companies wish to make use of their refining facilities on the Atlantic Seaboard. It would be surprising if they felt otherwise. Coordinator Ickes is reported to lean to a crude line, and a crude line appears probable as this is written.

On the other hand, there are some sound arguments in favor of a products line from the Southwest to the East. There is more elasticity in a products line than there is in a crude line. Some of the companies heavily engaged in marketing on the Atlantic Seaboard have little or no refining facilities there, their refineries being located closer to the point of production. Products lines have proven sound investments to date and while there had never been a major crude line projected from Texas to the East until the present emergency arose, products lines had received favorable consideration.

As the matter now stands it is apparent that the oil companies would prefer to continue to move their crude and products eastward by tanker—but that they feel that participation in crude lines as a safety precaution is an expensive gesture which they should make.

Committee Appointments

APPOINTMENTS to the 25 oil-industry advisory committees established by Petroleum Coordinator Ickes include excellent representation from each branch of the industry and indicate that an all inclusive opinion will be sought on matters concerning oil's position in national defense.

Recognized leaders from each of the many groups that compose the industry have been selected, and for the first time since the World War all elements have been united for functional service. In addition to its defense activities, such an organization should afford the industry an unusual opportunity to harmonize some of its own discordant views.

The purpose of the advisory committees is to provide a channel through which the industry's views can reach the coordinator, and be taken under advisement by him and his staff. This should dictate a policy of close cooperation within the committees themselves, between the committees and the industry and with the coordinator's office. It is to be assumed that the responsibility of any action taken by these advisory committees will be saddled upon the industry as a whole.

Through the advisory committees the industry will be able to demonstrate its ability to coordinate its own activities, provide leadership and promptly meet every requirement that may be placed upon it. Therefore, all suggestions and recommendations to the coordinator should be unanimously agreed upon and offered in the spirit of constructive cooperation toward the end that the industry will be able to efficiently discharge its obligation to the defense program without unduly interfering with civilian supply.

That some of the problems brought about by the National Defense program will work a hardship on parts of the industry, or even on the entire industry, goes without saying but with the coordinator having the practical advise of representative oil men, it is to be hoped that there will be no unnecessary dislocation nor interference not essential to the defense program.

Washington Roundup

Ickes opposes transfer of more tankers . . . House and Senate fight over Cole bill amendment . . . DeGolyer may be named head of production . . . OPACS gives approval to California price boost, starts a study of markets on Gulf Coast

By B. F. LINZ, Washington Correspondent

INTENSIFICATION of the East Coast shortage faced industrialists and private consumers in that area last week as Administration officials fought over the question of tanker control.

Asserting that he will not be able to carry through his assigned task of coordinating the oil effort unless he has control over tankers, Coordinator Harold Ickes bearded the Maritime Commission, reportedly thwarting nearly completed plans to transfer another 50 vessels to British service.

A second controversy was well under way in Congress, where the House of Representatives refused to accept a Senate amendment to the Cole bill—passed by the latter July 15—which would terminate on June 30, 1943, the President's authority to protect pipe lines from application of the Elkins Act.

Organization of the coordination effort continued, with Ickes following up his July 12 announcement of committee membership with the determination that the regional offices shall be located in New York, Chicago, Houston, Denver and Los Angeles, but failing to make known the names of the staff men who will head the five field divisions.

Reports in Washington last week indicated that E. L. DeGolyer, consulting geologist, geophysicist and engineer of the firm of DeGolyer, MacNaughton & McGhee, of Dallas, was likely to be appointed head of the industry's production branch.

President Roosevelt, primarily to conserve power but also with a view to correlative savings in oil, asked Congress for authority to impose daylight saving time in such areas and for such periods as might be necessary.

In the field of prices, the OPACS found the May increase on California crude not unjustified, and went into the Gulf situation, as the President prepared to ask Congress for legislation authorizing the imposition of "ceilings" on prices of such commodities as might get out of line.

Outlook for the coming week: Action on the Cole bill by Senate-House conferees, with a bitter fight over the 1943 application of the Elkins Act; announcement of men who will head the regional offices; submission to Congress of price-control legislation; and possibly some indications of plans for pipe lines from Texas to the East Coast.

DeGolyer Selection Likely

E. L. DeGolyer of Dallas was seen last week as slated to take over production matters in the office of the oil coordinator, beating out Edward B. Swanson, associate director for production of the Petroleum Conservation Division, who reportedly was a strong candidate for the post.

Although it is understood that he was supported by Coordinator Ickes, Swanson's appointment was reportedly opposed by Deputy Coordinator Davis, who is said to have insisted that practical men from the industry be put in key positions.

If DeGolyer goes in as production head, it is likely that Swanson will lead a division of research and statistics, a highly important branch of the organization but one which will not involve dealing with practical matters.

Cole Bill Limited

House and Senate conferees are all set for a fight over the Cole pipe line bill, passed by the Senate July 15 after tacking on an amendment that would limit its duration.

The House July 17 refused to accept the amendment, sending the measure to conference.

By addition of a few words to Section 9 of the bill as passed June 5 by the House, the Senate provided that authority granted the President to suspend any provisions of the Interstate Commerce Act should expire June 30, 1943, coincidentally with the expiration of the Interstate Commerce Commission's authority to proclaim the necessity for construction of any interstate line, to grant the right of eminent domain to the constructing agency, to order construction by the Government, or to give financial aid to the builders of private pipe lines.

Comments on Amendment

The Senate amendment doesn't "improve" the bill, Ickes said July 17. The coordinator refused to accept any responsibility for the bill, saying "it was not a department bill, because I think it could be improved in a great many respects, from the public interest.

"But in view of the emergency," he added, "I have not raised the question because of the necessity of getting oil to the seacoast. We will go right ahead if this bill becomes law and build a pipe line."

There is no doubt of Ickes' determination to have the projected pipe line constructed, even if the government is required to undertake the task. His views on Government ownership were made known in connection with the aluminum shortage, to remedy which he proposed Federal construction of a number of plants to be operated under management contracts by the aluminum companies, and is expected to assume a similar position on oil if the companies do not find it feasible to construct pipe lines to essential points.

Representative William P. Cole, Jr., author of the measure, asserted the amendment would have a "very damaging effect" on the bill,

and would result in the withdrawal of private participation from the pipe line program, leaving it up to the government to finance and build lines.

"I cannot conceive of private capital taking the risk of constructing these lines if it is known that they cannot operate them after 1943," he commented.

With the increasing certainty that railroads will not be able to fill the gap in transportation left by the transfer of tankers, construction of pipe lines has become more imperative than ever, Cole contended, and construction of private lines would relieve the situation in much less time than required if it became necessary for the government to undertake construction.

Senate Debates Amendment

The Senate engaged in lengthy debate over the amendment, suggested by Chairman Joseph B. Eastman of the Interstate Commerce Commission, and introduced by Majority Leader Alben W. Barkley, Kentucky, as a substitute for a somewhat similar committee amendment.

Opposition to it was based on contention that no one company could undertake construction of the proposed $70,000,000 pipe line from Texas to the East, and accordingly it would be necessary to waive the provisions of the Elkins Act, preventing a combination of companies from building a pipe line so that six or seven concerns could participate in the project.

Senator Guy M. Gillette and other members of the anti-major company bloc threw their support behind the amendment, Gillette taking the position that "otherwise, there is no limitation whatever to the exercise of the power of the President to supervise and extend the operation of these lines beyond that time limit, under such terms and conditions as he may lay down, and to relieve the operators from the provisions of the Elkins Act."

The amendment was opposed by oil officials of the Department of the Interior on the ground that it put control of the pipe lines in the Interstate Commerce Commission, and made the parties subject to the Elkins Act, with the result, they predicted, that it would be impossible to get private individuals to build pipe lines.

This objection, however, was declared by Senator Burton K. Wheeler, chairman of the Interstate Commerce Committee, which had charge of the measure, to be exaggerated and due to "pressure" put on it "by the big oil companies by intimating that they will not build the pipe line if this provision is contained in the bill."

Ickes vs. Maritime

Meanwhile, the situation was further confused by a controversy between the Maritime Commission and the Oil Coordinator over which agency is to have control of tankers.

Ickes, who two weeks ago edged the OPM out of the petroleum picture by contending that President Roosevelt had vested in him sole authority to deal with defense oil problems, last week told the commission the same thing, insisting that no further transfers of tankers be made without approval of his agency.

The coordinator's demand for the surrender of authority followed reports that the British had asked for an additional 50 tankers, to be transferred at the rate of 10 a month.

Reportedly, he is opposed to further transfers at this time, taking the position that they might imperil rather than further the all-out aid to Britain program, of which he is a firm supporter.

Further transfers of tankers, he is said to believe, might relieve Britain temporarily, but they would increase the difficulties of supplying the highly industrialized east, slowing down the production of defense commodities for both our own and the lend-lease programs.

The bureau of emergency shipping of the Maritime Commission has been engaged for several months on a study of American shipping facilities, but the coordinator has undertaken a similar study of his own, asking the operating companies to submit complete data regarding their tankers.

Conferences are known to have been held between commission officials and representatives of the coordinator, but it is said they are far from agreement as to which agency shall control tankers.

During the week, the commission announced that the keel of the first of the 72 tankers which it is building at the Sun Shipbuilding & Drydock Company's plant at Chester, Pa., was laid July 15, exactly seven weeks after contracts for the $194,400,000 order were signed.

That the tanker situation is tense was indicated by Coordinator Ickes at a press conference July 17, at which he refused to discuss the matter.

"I cannot answer any questions on tankers," he said. "There is too much loose talk now about tankers."

There were indications that the reluctance of Administration officials to discuss the tanker question was due to the fact that the international situation is involved.

Reports seeping into Washington gave the impression that Britain is badly in need of more tankers and, in the near future, may face a severe shortage of tanker transportation facilities unless additional tonnage can be furnished by the United States.

Reports of the number of tankers which it is planned to add to the fleet already transferred varied, running as high as 75, but it was not generally believed that such a large number would be taken, since it would reduce supplies for the East Coast by nearly 50 percent from normal.

It was suggested that with the investiture of Iceland by United States forces, the shuttle service now running between Gulf-Caribbean and North Atlantic ports might be extended to that point, materially reducing the distance the oil must be carried by the British vessels to which it is transferred for the Atlantic traverse.

It was pointed out that this extension would be preferable to supplying tankers for the full Atlantic crossing, which is understood to have been asked by Britain.

Administration officials are refusing comment on the situation, but there is a general expectation that if any further transfers are to be made the matter will be referred to an industry committee to determine the routes from which the ships should be taken and the number to be surrendered by each of the operating companies.

There has been some discussion of the possibilities of transferring Norwegian tankers from the South American to the trans-Atlantic route, between Administration officials and Norwegian owners, it is understood.

It is said there are approximately 17 such ships which might be made available, but a survey of the situation appears to have indicated that British needs cannot be met satisfactorily with such a small number.

However, it was rumored, if Britain is to be given a large number of tankers, it may become desirable to shift the Norwegian vessels so as to lessen the strain on the American companies.

Asked for comment on the situation at a press conference July 15, President Roosevelt said he knew nothing about any plans to divert further tankers and that nothing along that line had been laid before him.

His comment, however, was not considered a denial that the matter had been discussed in official circles, since observers suggested that the President would not be asked to give his attention to the subject until plans had been fully developed for his approval.

Pipe Line Situation

As the Cole bill came before the Senate for consideration, Ickes disclosed he has made a decision on the several proposals and routes for new pipe lines which have been submitted, but would not make his views known until after the Senate and House have finally adopted the legislation.

Naturally both of the proposed pipe lines, the crude line and the products line, come in for a great deal of discussion in the oil country. Actually there seems to be little change from the situation reported in last week's OIL WEEKLY. Among the things which are being discussed, however, are the following:

A group of representatives of the proposed builders of the line are making a trip by automobile along the approximate route of the line. No work on right-of-way will be undertaken until the Coordinator has given the signal and that signal won't be given until the Cole Bill is a law. The name of the company to build the crude line may be "National Pipe Line Company." Proposed dimensions of crude line are: 20-inch from a point near East Texas to near Salem, Ill., and 24-inch from there to Atlantic Seaboard, with 60 miles of 16-inch from Wood River, Ill., to a junction point near Salem. The latter will provide a means of handling Oklahoma crude. Thirty stations are mentioned as being needed. Communications lines would be laid in conduit.

The crude line seems highly probable, because Coordinator Ickes is reported to favor it. The products line, desired by companies having no refineries on the Atlantic Seaboard, with some other companies also looking on it with favor, will also have to have the Coordinator's blessing, because without his sanction priorities cannot be obtained on necessary steel. Whether or not he will bless the products line, as well as the crude line remains to be seen.

Railroads Reduce Rates

Moving voluntarily to aid in easing the East Coast shortage, railroads July 11 put in sharply reduced rates on crude oil, with schedules filed on less than the statutory notice of 30 days because of the emergency.

Oil now is moving by rail from Lima, Ohio, to Bayway and Bayonne, N. J., in daily trainloads of 50 cars carried to seaboard at 17½ cents per 100 pounds. As a result of the action of the carriers, it was indicated there will be no need for government action in the rail rate matter.

Still other reductions are in the offing, it is understood, with some talk among carriers of low rate schedules from Pittsburgh and Baton Rouge.

Railroad Speed-Up

Circuitous routing of tank cars will shortly be outlawed by the Interstate Commerce Commission, vested with "emergency powers" to expedite loading and unloading, movement and routing of railroad freight whenever it becomes apparent that the transportation system of the country is bogging down under the load imposed on it by the defense program.

Quietly, the commission this month received a substantial sum for expansion of its Bureau of Service, and equally quietly it has been staffing that bureau's field organization to speed up car movements.

Under the ICC's program, every idle tank car will be made available for service immediately upon demand, steps will be taken to see that cars carry maximum loads, direct routings will be required and cars will move at maximum speeds.

If, as requested by the oil coordinator, the companies supplying the east coast resort to large scale railroad movement, which they are seen as doing willingly if the ICC grants the emergency reductions in rates also suggested by Ickes, the commission's program for expediting movement will become of major importance.

For the moment, however, the situation with respect to tank cars is less pressing than that affecting other types of freight cars, it was said. But the use of tank cars is increasing steadily and, in view of the shortage their proper utilization will be one of the major concerns of the ICC "expediters."

Coordination of the utilization of the tank car supply also is to be worked out by a committee representing tank car owners and lessees appointed following a conference in Chicago presided over by Fayette B. Dow, consultant to Transportation Commissioner Ralph Budd of the Office for Emergency Management, at whose suggestion it was held.

The 15-man committee, which will function through a paid executive secretary, included J. S. Wood, Pan American Petroleum & Transport Company; J. D. Reardon, Union Oil Company of California; C. R. Musgrave, Phillips Petroleum Company, and P. G. Anderson, Lion Oil & Refining Company, as representatives of oil company tank car owners, and Lee Coles, Standard Oil Company (Indiana), and R. J. Walsh, The Texas Company, as representatives of petroleum shipper lessees.

The tank car leasing companies will be represented by B. C. Graves, Union Tank Car Company; L. H. S. Roblee, North American Car Corporation; Robert Rogers, Shippers Car Lines, and H. E. Coyle, General American Transportation Corporation. Railroad owners of tank cars will be represented by J. J. Mahoney, Atchison, Topeka & Santa Fe Railroad.

California Prices Okehed

Recent increases in California crude prices were given the blessing of the OPACS July 15, after five weeks of study of an increase of 12 cents announced by Standard of California May 23 which, with previous increases, had brought the price of gasoline up approximately one cent a gallon, but the companies were told they must not make any further increases without approval from Washington.

To assure the producers against discrimination, Henderson requested refiners and marketers in the area not to advance quotations without prior consultation with his office.

Henderson's decision was based on a cost study made by the OPACS on the basis of data sub-

mitted by the producers following a meeting with defense officials in San Francisco June 7.

"After reviewing data submitted and previous records this office will not request reduction in California crude prices at this time," the producers were advised by telegraph. "This is contingent upon understanding that there will be no further increase whatever in crude prices without prior consultation with this office and I am further requesting all refiners and marketers that there be no increase whatever in refined products without similar prior consultation."

Study Gulf Prices

Leaving the California situation, the OPACS embarked on a study of conditions in the Gulf Coast area, Leon Henderson on July 17 requesting refiners in that section to maintain a base price of six cents for Gulf Coast gasoline.

Henderson pointed out that the quoted low of the market for this gasoline had risen between the first of the year and June 19 from 3⅝ to six cents per gallon, and several cargoes recently have been reported moving at prices ranging from 6¼ to 6½ cents. On June 19, the oil industry was requested to maintain consumer prices at their then levels, except after prior consultation with the OPACS.

Officials indicated that the request for maintenance of present levels was actuated by an extraordinary demand for gasoline now existing on the Gulf and was aimed at controlling speculative buying. The action, it was said, followed conferences with large and small refiners at which a substantial agreement was reached as to the desirability of control.

At the same time, they said, prompt consideration will be given any requests of small refiners for permission to make sales at higher prices in order to avoid unusual hardships consequent upon the industry readjustments which may be necessary by reason of the tanker shortage.

It was also disclosed that OPACS intends to make a detailed study of costs of refinery operation in the Gulf area, information for which will be assembled in cooperation with the office of the coordinator, which was consulted before the price appeal was issued.

Requests of OPACS for advance notice of price advances has met with "gratifying response," Henderson said. Several large marketers on the eastern seaboard, including Standard Oil of New Jersey and Socony-Vacuum Oil Company, he explained, have withheld proposed advances in service station prices after consultations in Washington.

These advances will be reconsidered when it is possible to evaluate the extent to which increases in costs of transportation from the producing areas to the East Coast will be relieved by plans now being worked out by the coordinator, he disclosed.

Price Fixing Bill

Legislation authorizing the President to set "ceilings" for prices of commodities is being drafted by the Administration for introduction in Congress next week in an effort to stem the increasing threat of inflation.

Another move in that direction which may be made in the near future is the introduction of a compulsory system of savings from current earnings for all wage earners, which would remove from the commodity markets "loose" money which might be spent by the public on commodities which the Government desires to curtail.

Whether the proposed price control would immediately be applied to oil products has not been divulged. On the whole, prices of these commodities have remained fairly constant, such increases as have been made being due to actual advances in production costs.

The "workers' savings" scheme, however, probably would be applied to all industries if adopted, although there is some belief in Washington that the Administration first would try out a semivoluntary system for workers in defense industries, under which a portion of workers' pay and part of the defense profits of companies would be allocated to a fund designed to check inflation and offset decreased employment following the passing of the emergency.

President Roosevelt is represented as opposed to any flat "freezing" of all prices, as recommended by Bernard Baruch, head of the War Industries Board in 1917-18, and it is considered likely that his plan contemplates the imposition of ceilings on prices of such commodities as give evidence of speculative rises or get out of line with the general price level.

The President's plan, accordingly, is seen as contemplating continuation of the policies followed by the OPACS, but giving that agency an authority to enforce its orders which it now lacks.

Committees Satisfactory

Make-up of the regional committees named by Coordinator Ickes on July 12 are, on the whole, meeting with approval from the industry, so far as can be learned in Washington.

While there may be some minor heart-aches on the part of men who failed to get nominations which they coveted, there has been little or no criticism of the committees in general, but it is admitted that among the members are many of the strongest personalities in the industry.

The establishment of the regional committees indicates that the industry will be called upon for the same united effort as it was asked to make under the National Recovery Act.

Announcement that the field offices would be located in New York, Chicago, Houston, Denver and Los Angeles was made by Ickes July 17, at which time he promised that the staff appointments for the offices would be made shortly.

While the office and industry committee for the eastern region will be faced immediately with the problem of the shortage, the coordinator could foresee no immediate matters which would require consideration in the other regions although, he indicated, the shortage on the east coast may well spread to other areas from which it is proposed to take oil for the Atlantic region.

Generally, he explained, the committees will keep in touch with the industry in all its phases in their respective regions and will report to Washington on conditions.

"I cannot foretell all the ramifications of the situation, especially if we are in for a long period of emergency," he said.

Criticize Pipe Lines

Criticizing the pipe line program, Senator Chan Gurney last week laid down a schedule of other steps which might be taken to eliminate a shortage of oil on the East Coast.

A member of the subcommittee of the Senate Interstate Commerce Committee which was in charge of the Cole bill, Gurney charged that

[*Continued on page 38*]

Many Small Savings Add Extra Tanker Round Trips

WITH approximately 50 tankers already out of the Gulf Coast-Atlantic Seaboard transportation service, and an additional "take" of as many more threatened, maritime branches of oil companies are scanning closely every move of what had become standardized tanker practice in handling, loading and unloading.

Instead of shipping mixed cargoes, in which many tankers had almost as composite a liquid cargo as a through tank-car train, rescheduling of cargoes is being worked out to permit at most not more than three types of hydrocarbons to be lifted by one ship. This applies, not only to most cargoes of refined products, but also to the less common practice of moving more than one crude in the same bottom.

Further gain through planned cargoes will eliminate or reduce to a minimum the time lost through cleaning tanks for different successive cargoes. Assignment of a tanker to continued "dirty oil" handling, for instance, is estimated by one company to promise a gain of 5 percent in effective carrying capacity.

Closer contact between ship and shore terminal, through radio advices as to cargo, ship position, changes in probable docking time, and other details of arrival or departure, permit the dock forces to have all in readiness for a ship before it is made fast, and the delay so often observed in getting the hoses attached and the cargo moving thus reduced to a minimum. Already some terminals have so speeded up this work that the hoses are handled almost before the gangway is swung out.

Pooling of tankers, whereby all waiting for dock facilities would be avoided by assigning an incoming ship to nearest open berth, would save time occasionally lost while waiting for the ship ahead to clear. This is believed by many port captains, however, to be practically eliminated through better scheduling of arrivals and departures.

Abandonment of the practice of carrying cargoes for a number of docks, or even ports, is wasteful of full cargo time, and tank-car shipments from a common discharging is being advocated. In some instances loading rack facilities are already being extended to accommodate this plan.

Placing all dock handling on a 24-hour basis is, where not already practiced, another means of gaining time. Some companies have restricted loading of gasolines to daylight hours, and departures have been delayed for twelve hours or more to permit the completion of a cargo already as much as 90 percent loaded.

Twenty-four-hour handling of tankers to and from docks with pilotage under all save impossible weather conditions will eliminate time lost at anchor now, especially during the winter months, while awaiting more favorable conditions for navigating narrow or congested channels.

Although present tanker runs are planned at a ship's most efficient operating speed, in many cases it will be possible to add as much as five to eight percent to a ship's speed, if the matter of increased fuel and added maintenance be justified by the added capacity thus obtained.

If the chimerical Florida ship canal were or could quickly be put into service, during good weather it would greatly cut the time now used in rounding Key West, even with the slow speed probably required for the transit.

Shore Improvements

Many docks now are able to load a ship, if lifting a single type of fluid, in from 3½ to 5 hours, depending upon the ability of the ship's personnel to handle the incoming streams and to maintain proper trim. Others are rapidly approaching this point through the addition of pumps, compounding of mains and installation of siamesing equipment at shipside terminals of the discharge lines.

Additional discharging equipment, through provision of sufficient pump capacity at the manifold to handle fluids as fast as they are put ashore by the tankers equipment, can shorten somewhat the time now required for this work, but the gain through this factor is slight where modern terminals are provided. Revision of terminals where tanker equipment is expected to transfer cargo to shore tanks is already under way at several Atlantic ports, with siamesing of lines to reduce to a minimum back pressures on ship's pumps.

Speeding of tanker operation while at sea will require more frequent and greater servicing of ships than found necessary under normal runs, with the dry-dock systematized and speeded to the limit to prevent loss during servicing of all time gained afloat. Frequent cleaning of bottoms, and the use of non-fouling finishes speed running time. Synchronization of all types of maintenance to fall within one docking period will also reduce non-productive time.

Present tanker practice is the result of many years of experience, and if surveys show that it may err on the slow side in spots, it also favors safety. Each speeding of handling, whether of ship or cargo, introduces new hazards to both ship and cargo. Navigation through conditions now deemed hazardous will heighten the strain on personnel, and thus increase the possibility of loss through failure of the human element. To prevent this speeding of tankers from increasing the mental condition known afloat as "tankeritis," one company has under consideration the use of a relief cadre, from which would be drawn regular replacements for all members of both black gang and deck forces, extending up to if not including captain and chief engineer. This relief would be with full pay while ashore, payable upon return to the ship, and is believed to offer a possible solution to the problem of maintaining adequate personnel aboard ships which are afloat practically all the time not actually in dry dock.

The 4½-inch slightly upset drill-casing is standard except that the threads are of the six-pitch Acme type with a double seal feature and ¾-inch taper. The threads are braced on the outside by a shoulder which mates with a shoulder on the inside at the end of the coupling.

Interesting Results From Deep Experimental Drilling Program

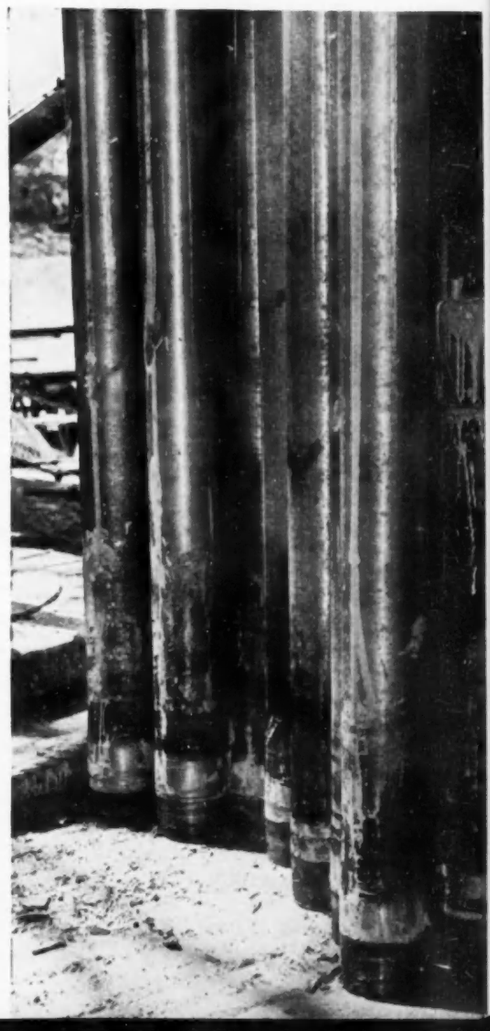
By STARK FOX

A DEVELOPMENT program which has been almost continuously experimental at Ten Section field for more than a year past has resulted in some interesting developments by Shell Oil Company, Incorporated. The program, still being carried on in the Ten Section field, entirely controlled by the company, has involved drilling various different sized holes, use of different sized drill pipe and, finally, use of drill-casing.

Originally, the company pursued a conventional drilling and casing program in the field. This was to set 11¾-inch at approximately 1000 feet, with approximately 8000 feet of 7-inch cemented on top of the sand. The hole size below the surface string was 10⅝ inches.

When the company began experimenting, the first change was to slim-hole drilling, but in a conventional manner. That is, drilling was carried on just as it had always been carried on, except that sizes were reduced throughout. In one series of experimental wells, surface pipe was reduced to 9⅝ inches and drilling was carried on by means of 4½-inch drill pipe in 8½-inch hole, which was cased with regular 4½-inch casing. At the same time, 3½-inch drill pipe was being used in 6½-inch, 6¾-inch, and 7⅝-inch hole.

When the company began the present drill-casing program, which has since become standard in the field, it did some experimenting with two sizes of hole, but did most of the drilling with 4½-inch drill-casing with 7⅝-inch hole from below the surface string at 1000 feet to the top of the oil sand at approximately 8000 feet. The one other size of hole, with which three wells were drilled, was 8½ inches, but the company soon determined that 7⅝-inch hole is at least as fast as 8½ inches and offers the advantage of smaller surface casing while hole smaller than 7⅝ inches does not offer sufficient clearance with 4½-inch drill-casing to permit of free circulation. At the same time, drill-casing smaller than 4½ inches appears to be too small from a mechanical standpoint, so that these sizes are as small as the company has gone. Size of the surface cas-



Drill-casing stands are racked and handled in the derrick similar to the handling of normal drill pipe.

Making up and breaking down of drill-casing stands is done just as rapidly and safely as with regular drill pipe. This type of connection cannot be snapped up as is normally done with conventional drill-pipe joints, but is made tight with the tongs.

ing for 7⅝-inch hole is 8⅝ inches; size for 8½-inch hole is 9⅝ inches. The company is now experimenting with 5½-inch drill casing in 8½-inch hole, but has not yet had sufficient experience to furnish conclusive comparisons.

Experience with drill-casing has thus far been completely satisfactory. The cost of casing built up for drilling is approximately 12 cents per foot more than regular casing, which is considerably less than the cost per foot of drill pipe, maintenance and depreciation. This immediate saving is also increased by economies of operation made possible by use of the drill-casing, in addition.

Among these is the matter of time. The average time of drilling has decreased approximately 10 days per well since the company began the drill-casing program. This decrease is due not so much to a cutting of actual drilling time itself, but is credited to the greater speed and efficiency of the method made possible by use of drill-casing.

A comparison of the conventional completion program with that used with drill-casing will illustrate the savings in time possible with the new method. In the conventional program, as it was originally used by the company in the area, 11¾-inch casing was cemented at approximately 1000 feet; then 10⅝-inch hole was drilled to 8200 feet with 5 9/16-inch drill pipe; then 7-inch casing was cemented at approximately 8000 feet; then 3½-inch drill pipe was used to drill out cement; perforated liner was landed in the oil sand; tubing was carried to 8000 feet, and the well brought in. In this conventional method, the drill pipe had to be laid down, smaller drill pipe had to be made up and laid down; tubing had to be made up; casing had to be made up. There were innumerable round trips of drill pipe; casing and tubing had to be brought in and made up before the well was completed.

In the most recent program is to drill to 8200 feet with 4½-inch drill casing, set a combination string consisting of that casing plus about 200 feet of perforated pipe (usually some of the drill-casing which has served its usefulness as such and has been perforated), and drill out with 2-inch tubing which is left in the hole as a production string. Needless trips in and out of the hole are avoided; there are no delays; there are no stands of pipe made up and then laid down. The drill-casing becomes regular casing; the "drill-out tubing" becomes regular tubing. The latest method even leaves the bit with which the cement is drilled out on the bottom of the tubing string, to be recovered at some future date when the tubing is pulled to clean out the wells.

Shell Oil Company's first slim-hole drilling was in 1935, when the company drilled two dry wildcats with an early "slender" hole technique, the idea then being that holes large enough to take cores from could be drilled at less expense than full-sized holes, and then reamed out to full size if a productive horizon was penetrated. The first well to be drilled under this program was in Santa Barbara County, followed by a deep hole in the Buena Vista Lake area of Kern County. Both were non-productive, but the wildcat which discovered the Ten Sections field was itself a forerunner of the slim-hole program which is now being followed.

The present program differs but slightly from the first rotary drilling, in which light-weight drill pipe or tubing, with a bit or cutting tool attached, was rotated in the hole. No changes are made in conventional surface equipment or tools, with the exception of tongs, which are fitted with 12-inch bearing surfaces in order to avoid crimping the comparatively thin-walled pipe. The pipe is rotated at approximately 400 rpm, with torque restricted to 3000 foot-pounds, or 150 pounds per square inch pressure on the engine manifold. Relatively high rates of mud circulation are maintained with a pressure of between 1000 and 1250 pounds on the pumps, due to the large inside

diameter of the pipe and the small outside diameter of the couplings.

The drill-casing itself is 4½ inches o.d., 3.958 inches i.d., weighing 12¾ pounds per foot, and is standard in every way except that the threads are of the six-pitch Acme type with a double seal feature and ¾-inch taper. The couplings are 5.563 inches in diameter.

Full advantage of the lighter weights of drill-casing compared with drill pipe has not been taken by the company, and the engineering department is not entirely sure that the savings possible through lighter derricks, blocks, etc., would be justified. The company has used the equipment it had on hand, and has made only one change in practice attributable to the saving of approximately 30,000 pounds in the weight of the drill string. This change is the stringing of only six lines through the blocks in place of the usual eight, with a resultant greater speed in running casing. The company has not determined, however, what effect the lighter weights will have on cost factors, or whether the saving of wear and tear on equipment through the use of lighter casing will result in any material or measurable savings.

Thread on the drill-casing differs widely from the thread on the regular tool joint, being braced on the outside by a shoulder which mates with a shoulder on the inside at the end of the coupling. A connection of this type cannot be snapped up, as the tool joint with its heavy thread and sharp taper and wide shoulder on both pin and box can, without danger of damaging the thread connection and seal. The practice at Ten Section, therefore, is to spin up the drill-casing as far as possible and then bring the shoulders together and the connection tight with the tongs. Extra time occasioned by this procedure is made up by reductions in time for breaking out the pipe in coming out of the hole. In the latter, only the lead tongs are necessary as a back-up, the connection being broken and spun out with the rotary table.

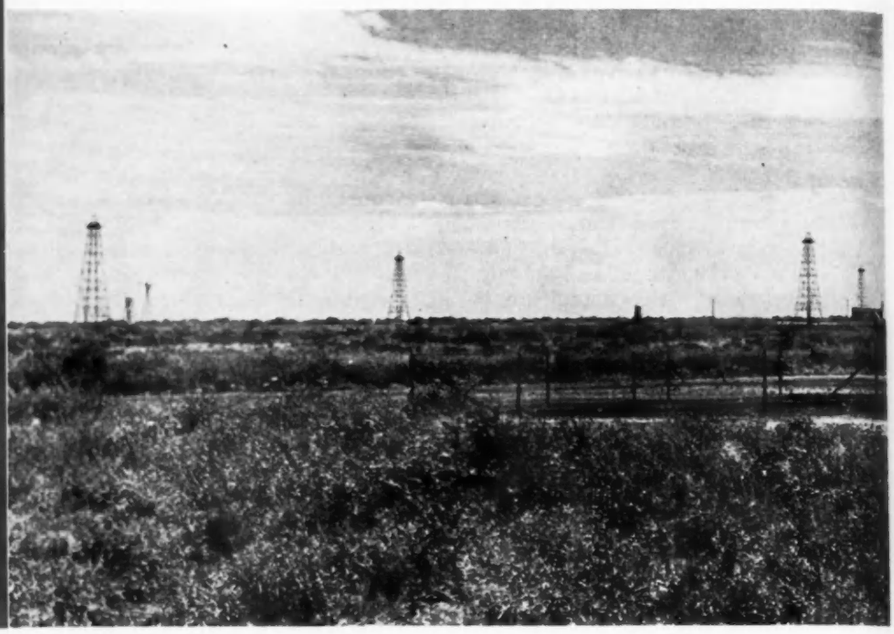
Almost ideal conditions for the development of a new drilling and operating technique exist at Ten Section, since Shell Oil Company controls the entire productive structure and has determined the geological and lithological conditions exactly. The structure is a gently folded anticlinal dome on the floor of the San Joaquin Valley, the particular area being the most prolific part of the Stevens zone. The top 6900 feet of the geologic section in the field are Pliocene beds composed principally of an alternating series of soft to hard and firm claystones, and loose to slightly consolidated, poorly cemented and easily friable sands. The uppermost brown shale, the Miocene, is composed of a series of dense, well-indurated and well-laminated platy, dark brown shales. The Stevens zone itself is a series of sand beds separated by occasional shale streaks of from 10 to more than 150 feet in thickness, the interbedded sand members ranging from 15 to 200 feet in thickness.

Average porosity of the productive sands in the Stevens zone is 16 percent, with a range of from 12 to 25 percent. Generally, they are moderately to fairly well cemented, compact, poorly to well sorted, medium grained to slightly coarse in texture and usually free from fines. Occasional well-cemented impervious sandstone shell bodies are found which, because of their lack of correlation and their general appearance, are thought to be lenticular or concretionary.

Speaking of the slim-hole program, the company said in a recent issue of its house organ: "Results from this new drilling practice have been entirely successful and initial mechanical difficulties were quickly overcome. Although several joints of pipe may be damaged in the drilling of a well, they are easily repaired. Abrasion occurring from the contact of the pipe with the walls of the hole necessitates replacement of a few worn couplings, but no apparent damage is done to the body of the pipe. The drill-casing withstands the drilling stresses satisfactorily without pipe twist-offs. It is reasonable to expect that the use of drill-casing will have application to other fields with good results."

Special 12-inch long adapters are used on the tongs to prevent crimping of the pipe. Their use is necessary only when joints are broken down after having been rotated, normal tongs being used when the joints are being made up.

Through successful application of several workover methods on an extensive scale, gas-oil ratios in the Goldsmith field of West Texas have been lowered considerably in recent years. Field weighted averages of between 4000 and 5000 cubic feet per barrel have been reduced to a present average of approximately 1500.



Cooperative Application of Modern Well

Reduces High Gas-Oil

By GILBERT M. WILSON, Staff Writer

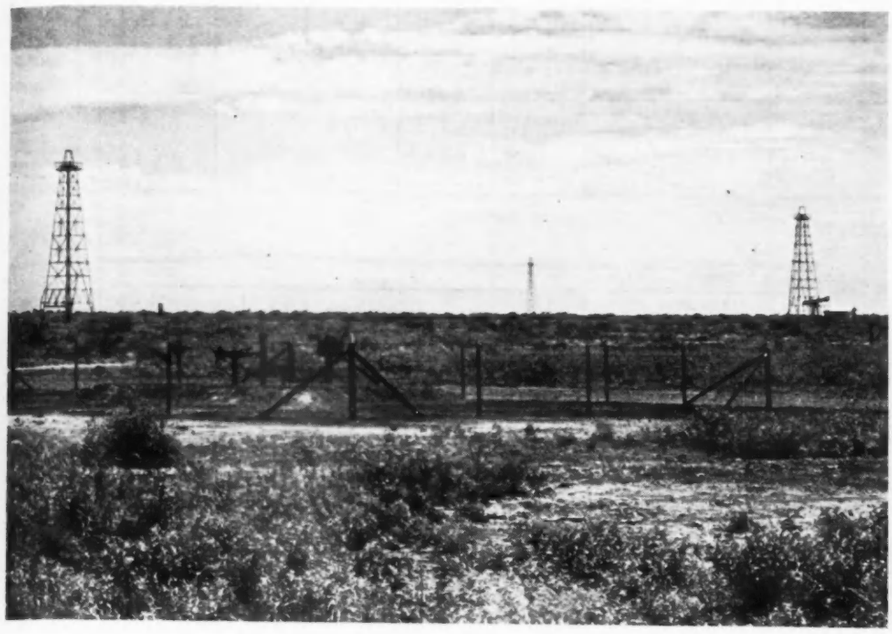
ONE of the most serious problems confronting the 29 operators in the Goldsmith field, West Texas, has been the abnormally high gas-oil ratios that usually are encountered in practically all but the outlying portions of the pool. The remarkable success attained in reducing these excessive ratios is a significant contribution of modern engineering as applied under cooperative efforts to gas conservation and reservoir energy saving, and many long-lifed benefits are anticipated.

As the prorated per-well allotment of oil production for each well is based upon the amount of gas produced along with each barrel of oil—5000 cubic feet of gas per barrel being considered the maximum at the present time, and above which daily allotments are reduced proportionately—various methods have been employed in performing certain remedial work to shut off part of the gas and thus reduce the gas-oil ratios of the penalized wells. By means of corrective work that had its inception in the latter part of 1937 through the cooperative work of the Goldsmith Pool Engineering Committee, and in the taking of more than ordinary precautions in completing subsequently drilled wells in the field, the average weighted gas-oil ratios have been brought down to approximately 1500 cubic feet per barrel, with comparatively few wells now exceeding the 5000-foot ratio limit set by the field rules. This does not include a few wells in certain parts of the field that are classed as gas wells, and which do not produce any appreciable amount of oil. Many wells whose gas-oil ratios were as high as 50,000 to 100,000, with a few wells even exceeding this mark, have been subsequently worked over under the program and brought down to below the penalty-free ratio of 5000.

Eliminating outpost wells and areas that ultimately may be included as a part of the Goldsmith Field, the present productive area embraces some 30,000 acres, of which 20,000 acres apparently is overlain by two fairly well defined gas caps.

Completion Practices

Total depth of wells in the field average 4250 feet, of which the lower 70 feet is the oil zone. Depending upon the location of the well on the structure, a gas zone



Workover Program

Ratios Sharply

varying from a few feet to 190 feet in thickness overlies the oil zone. Production is obtained from a dolomitic limestone of varying porosity. It is believed that the reservoir energy is derived principally from the gas pressure.

Drilling in the field usually is done with rotary tools, although some cable tool and combination tool jobs have been used. When rotary is used, the completion practice usually is to drill in with oil. Casing programs ordinarily call for an 8⅝ up to 10¾-inch casing to be set at 250 feet for surface water shut-off, while an oil string of 5½-inch pipe is landed just below the gas-oil contact in the productive zone. In most parts of the field, this contact point is easily recognizable, as a definite interval of five feet or less will show dry cores above, and wet or oil bearing cores below.

Acidizing in most wells is done in two stages. The first, or "clean-out" stage, consists of from 1000 to 1500 gallons that is meant to clean the face of the oil section. The second stage of from 3000 to 3500 gallons opens up channels farther back into the formation.

Unless later remedial work is performed in the well, no liner is used. A string of 2-inch tubing, perforated and bull-plugged on the end is usually set near the bottom of the hole. Most of the wells flow naturally upon completion, but in the lower pressure areas some gas lift, including flow valve and intermitter installations, and a few pumping wells are present.

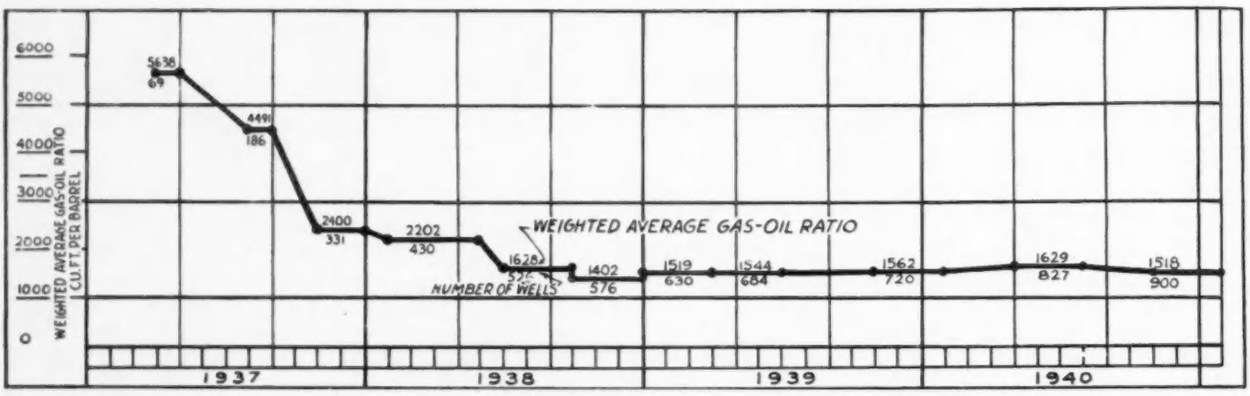
High gas-oil ratio remedial work for the most part concerns flowing wells, as their position on the higher points of the structure usually include a portion of the gas cap. Four general methods or practices in the re-completion work in the field that have been used with a great degree of success are, (1) Cement Squeeze Jobs; (2) Formation Packers; (3) Chemical Plugging; (4) Cementing Liners. In general the work-over jobs have been done on wells where the casing had not been set low enough, or where gas had channeled around below the shoe to re-enter through the upper part of the oil section.

Cement Squeeze Jobs

In the method involving squeeze cementing of that portion of the open hole just below the casing shoe, and through which an excess of gas is escaping from the formation, the well is first killed with water. The tubing then is pulled, and by means of a bailer, a plug or bridge, comprised of sand or gravel and sometimes oakum, is placed in the hole up to a point approximately 10 feet below the gas-oil contact, or as nearly so as can be estimated from the well log and cores taken at the time the well was drilled. A three to five-sack cement plug or cap then is dumped on the top of the sand or gravel, and allowed to set for at least 24 hours. This cement cap prevents fluid or slurry used in the squeeze job from entering the oil zone by filtering through the gravel.

Following this the tubing is run in the hole again but with a cement retainer placed near the bottom of the string so that it can be set in the casing just above the shoe. Water is pumped into the hole in the interval between the bottom of the casing and the cement plug, in order to learn the rate at which water is taken up by the open formation interval to be cemented off. The data thus obtained are useful in determining the quantity and rate of pumping in the slurry in the next operation.

Approximately 15 to 20 sacks of cement are then pumped through the tubing and into the open interval of formation under pressure. After the cement has set, water is again pumped into the hole, and by checking any drop on pressure at the surface, determine whether the formation has been closed off effectively. The tubing is then removed, the cement cap, and sand or gravel plug cleaned out, and the tubing re-run again. The well is



The rapid decline and continued control of weighted average gas-oil ratios in the Goldsmith field, despite the steady increase in number of producing wells, is shown by this graph.

swabbed in and placed on production at a usually much-reduced gas-oil ratio.

Formation Packers

The successful use of formation packers in reducing gas-oil ratios has depended to a large extent upon the type of formation exposed in the hole. Good results have been obtained where a hard break in the lime formation is found a short distance below the gas-oil contact, and where the harder and more dense interval has resulted in a cleaner hole at that point, providing a good seat for the formation packer. These hard spots usually are found through the results of keeping accurate graphic records of drilling time versus depth at the time the well was being drilled.

Three general types of packers are being used. The anchor type, which has for its packing medium, rubber, canvas, composition, oakum, or any of the current synthetic materials that are resistant to the action of oil, gas or water, is one. In this type of formation where sharp protruding edges and irregular surfaces characterize the surface of the open hole, oakum has been found to give excellent results as a packing medium, since the soft material will readily effect a seal on the rough surfaces. The anchor type of formation packer is set by means of a tail-piece that extends from the packer to the bottom of the hole. The length of this tail-piece determines the distance up from the bottom of the hole that the packer will be placed. As soon as the packer assembly touches the bottom of the hole, the weight of the tubing is set down on it, collapsing the packer and forcing the packing material into the walls of the open formation. The tail-piece, a lower section of which is perforated, is usually bull-plugged.

Another popular form of packer that is being used successfully is the hook-wall type. This type is capable of being re-set without having to remove the tubing from the hole, should it be found necessary to shift the position of the packer to a different interval in the pay zone.

This type of packer hangs in the casing just above the shoe by means of a slip mechanism, and packs off in the formation below. The distance between the slip mechanism and packing element may be any distance, and is governed by the depth of the casing seat and the additional depth of the pack-off point in the open hole below. The packing element usually consists of one or two sections of oil resistant synthetic rubber material which can be expanded or contracted at will at such times that the packer is being lifted and re-set in the hole.

A third type of packer that has been used employs a stepped or tapered base that is set down into a shoulder in the open formation. The use of this type is more limited to wells that are being drilled, and in which it would be more convenient to provide for such a shoulder.

Regardless of the type of packer used, the well must be killed, usually with oil, after which the tubing is pulled in order to run the packer.

Chemical Plugging

In the chemical plugging method the hole is prepared in much the same manner as is done for the squeeze cementing method, except that it is bridged or plugged up to just below the apparent gas-oil contact by means of a jelly seal pumped down through the tubing after the well has been killed with water. The only hoisting necessary is when the tubing is raised the short distance to the point of the bridge in the open hole. A sodium silicate compound then is pumped down the tubing and forced out into the open formation and allowed to set. Approximately 1000 gallons of the chemical constitutes an average treatment. Setting time of the injected chemical is accurately controlled. After the chemical has set, the jelly plug is circulated out of the hole, and the tubing again lowered to its former position. The well is then swabbed back on production.

Chemical methods of plugging are relatively new in their application to limestone wells and it is therefore impossible to obtain a fair picture of the degree of success that has been thus far attained. Because of the varying degrees of porosity usually found to exist in the oil producing formation in limestone areas, the chemical, having a consistency practically that of water at the time it is injected, will more readily enter the more porous sections, at the same time slighting the less porous intervals at the pressure at which the chemical is being pumped in. Following a certain period of setting, the chemical will assume a gum-like consistency, and effectively block the voids into which it has penetrated. The greater the distance of penetration back from the well bore, the greater will be the effectiveness of the plugging job. The use of a jelly compound makes it unnecessary to pull the tubing.

In wells in this field in which the conditions have been suitable for chemical plugging, excellent results have been obtained in successfully shutting off excess gas

production and thereby reducing gas-oil ratios.

Cementing Liners

Some operators in the field prefer to run a liner and cement it in the open hole section and follow up by gun perforating the lower portions and then acidizing through these holes.

After killing the well, a blank liner, long enough to extend from the bottom of the hole up to just above the casing shoe, is lowered on the tubing (or drill pipe, if the drilling equipment still is on the well) by means of a special swage or adapter on the bottom of the tubing string. Cement then is pumped down through the tubing and liner and up between the liner and open hole. Following the removal of the adapter and tubing string after the cement has properly set, the well is selectively gun perforated in the lower portion of the oil producing horizon, and acidized through the perforations. This method permits careful selection of the intervals to be produced, and thus eliminates much of the excess free gas in the top of the formation.

Some wells have been treated successfully by running a short liner and cementing it over that portion of the open hole that is producing the free gas, and allowing the lower portion of the hole to remain open.

Besides the sub-surface conditions which must be considered, the cost factor enters into the problem of which method will be used by the operator in working over his high gas-oil ratio well. In the methods involving cementing, cable tools and a derrick or mast must be moved in if, as in the majority of the cases no derrick is left over the well upon completion. When a formation packer is decided upon, only a light unit or mast is needed, as only the tubing string has to be pulled. The chemical method of plugging off the gas zone requires no tools, except a light pulling unit. The tubing is not removed from the hole, but is raised only a short distance to permit the placing of the jelly plug or bridge in the bottom of the hole. Water and chemical pumps on the service trucks supply all of that power that is needed.

Completion Practices Improved

Current completion practices, based on findings brought to light during the working over of many wells within the past several years, include steps that will eliminate, or at least reduce the number of wells that might need work-over jobs several years later.

The most important of these steps is the practice of carefully coring ahead when the estimated location of the gas-oil contact is approached. If cores, samples and cuttings, are carefully taken, the gas-oil contact is easily detected within an interval of several feet. Following the finding of this mark, the hole is drilled ahead approximately 10 feet, at which point the oil string is landed and cemented, making sure that adequate slurry is forced in back of the casing at this point to insure a good shut-off of the gas. The well is drilled ahead only after the casing string has been set.

Field Production Units Proposed

While excellent results have thus far been obtained through this work-over program in substantially reducing the gas-oil ratios of many wells in the Goldsmith Field, a number of wells yet remain which might benefit by such work. During the past several months much of the work of this nature has been held in abeyance pending an expected decision by the Texas Railroad Commission in regard to a production unit plan that has been proposed by the Goldsmith Pool Engineering Committee.

The plan, in brief form, would permit units to be formed of acreage blocks, each to be approximately 160 to 200 acres in size. Instead of allocating oil allowables in the field on a per-well basis, the plan would involve the granting by the Commission of an order permitting the operator of each unit to produce his allowable from not less than one-half of the wells in the unit, that are produced with the lowest gas-oil ratio. In other words, an operator having in his eight or ten-well unit several wells that produce at an abnormally high gas-oil ratio, would be allowed to produce the total oil normally alloted all the wells in the unit from not less than four or five of those wells which produced at the lowest gas-oil ratio. The gas normally wasted through the producing of the high gas-oil ratio wells would therefore be held underground where its energy could be utilized to the best advantage in the maintenance of the reservoir pressure.

The establishment of such a plan would permit the saving, or rather conserving in the underground reservoir, of approximately 35 percent of the annual volume of natural gas usually produced. At the present rate of production of gas in the field, this would represent over 5,000,000,000 cubic feet of gas annually that would be saved.

Realizing that such a move would probably set a precedent in altering the methods of allocating production for wells in gas-drive fields, the Committee also points out that the life and ultimate yield of wells in the field would be prolonged considerably. Likewise eliminated would be the cost of installing compressor plants at some later date for cycling gas back into the formation after the field had begun to decline in bottom hole pressure due to the premature depletion of the gas through the high ratio wells. It is generally agreed that such a plan would be a forward step in the conservation of oil and reservoir energy.

While excellent results have thus far been obtained in performing gas-oil work-over jobs in wells in this field, further work of this nature has been temporarily halted in the hope that the proposed unit production plan will be approved. This would accomplish the two-fold beneficial result of making further work-over jobs unnecessary, and at the same time would still further reduce the average field gas-oil ratio to less than 1000 cubic feet.

Typical examples of results obtained through successful workover jobs in reducing high gas-oil ratios in the Goldsmith Pool, West Texas.

Well	TYPE WORKOVER	PRIOR TO WORKOVER		AFTER WORKOVER	
		B/D Rate	G/O Ratio	B/D Rate	G/O Ratio
A	Cement Squeeze Job	72	20,450	166	1,427
B	Cement Squeeze Job	74	87,415	205	2,153
C	Formation Packer	64	14,064	158	3,047
D	Formation Packer	90	10,122	84	1,113
E	Chemical Plug Method	10	15,158	18	447
F	Chemical Plug Method	456	11,850	30	4,600
G	Cementing Liner	26	64,597	174	695
H	Cementing Liner	42	190,520	936	4,302

RIGHT WAY

The stub in this collar has been reduced by a rather wide, flat cut. The operator withdrew his torch slightly before danger depth had been reached, but weakened the dutchman to the point it could be knocked out of the collar easily.

Care In

Removing Dutchman Saves Many

Used Fittings

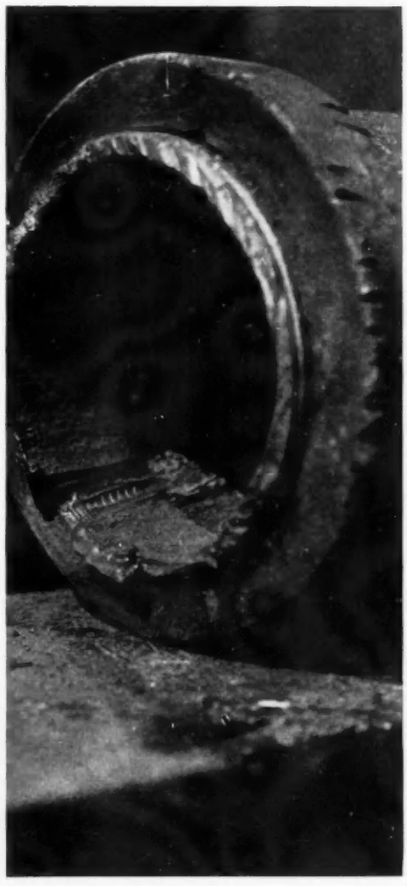
By FRANK B. TAYLOR, Staff Writer

WITH the exception of pipe and casing, general fittings exceed in volume all other parts reclaimed by the oil industry annually. Collars, ells, tees and swedges are the most numerous fittings reclaimed, with crosses, flanges of all types, clamps, saddles, close nipples, unions and plugs following.

Prior use generally determines whether or not it is practical to salvage fittings for reuse. In many cases special fittings become obsolete during use, making salvage uneconomic. Corrosion may reduce the possible value of any connection.

In dismantling any type of installation, disregarding heavier units, the common procedure is to cut away pipe connections with a torch. In so doing the cut is made at or near the end of the exposed thread, or if no thread is exposed the cut is made about three quarter to one inch from the fitting. By close cutting in this manner as much of the pipe is saved as possible. Flange connections or unions may be disconnected to save the thread on the pipe and to obviate the necessity of knocking out the stub nipple left from cutting with a torch.

Fittings and connections are separated from piping and are turned over to the reclamation department. Here they are grouped



WRONG WAY

The cut was made too deep to save the threads of the ell marked for salvage. Each thread, from face to rear of stub nipple, has been grooved by the cutting torch. It is certain the ell will leak through threads if placed back in service.

in general classes as to style and use. Fittings that obviously cannot be reclaimed, or for various reasons are totally unfit for further use, are junked. The working total may be reduced even more by the reclamation foreman when it is evident that a particular fitting would require as much salvage expense as a new one would cost.

By dismantling methods each fitting checked for salvage contains a stub nipple or "dutchman" which must be removed. Only on small connections is it economically practical to break up fittings with a wrench and back-up. Instead of attempting to remove the dutchman from larger pieces with tools, the cutting torch is widely used. Unless proper methods for removing the dutchman in this manner are used, a large number will be ruined beyond repair.

Cutting Procedure

For connections of medium size, containing stubs of regular thickness, only two cuts are necessary. The cuts are generally made through opposite sides of the stub. In practice a complete cut, rather wider than ordinary, is made from the outer edge of the dutchman to the face of the nipple. At this point the torch is tilted into the fitting, with the head of the torch almost flat with the length of the stub. From this angle the first cut is carried on into the stub to the edge of the threads.

This last cut is the most important function in the reclamation of fittings. The length of the cut may be two or three inches, or from the face of the connection to the end of the dutchman within the piece being salvaged. The depth of the cut must be carefully controlled for even at the face of the fitting being reclaimed the cut must be no deeper than the thickness of the pipe. Farther into the fitting, the cut must be held to a lesser depth as the thickness of the dutchman decreases toward the end of the threads. By misjudging or by improper handling of the cutting torch, the thin wall of the dutchman can easily be cut through and when this is done it almost invariably results in cutting into the threads of the fitting.

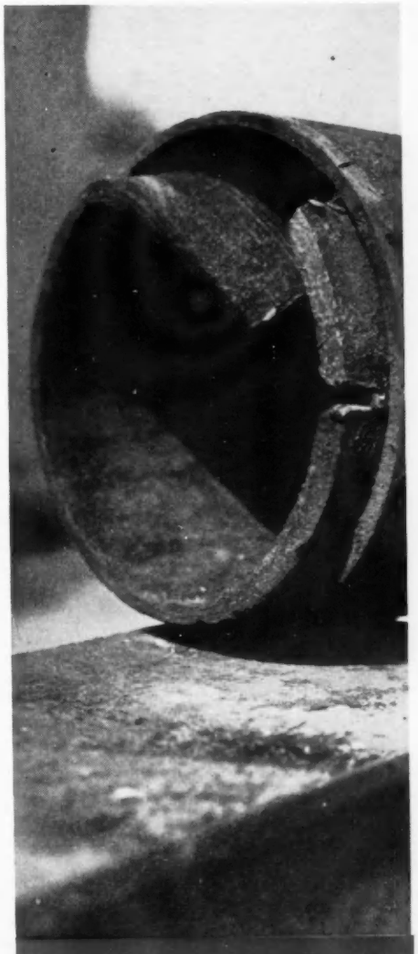
In operating the torch while making the inside cut it is only necessary to produce a definite weakness at that point in order to knock out the dutchman. For instance, if oxygen acetylene equipment is being used, too much oxygen pressure on the cutting nozzle gives a sensitive flame that is quick to cut through the threads, but one that can be used to cut lengthwise from the face of the fitting to the inner end of the dutchman by tilting the head nearly flat after the metal starts to run. A sensitive trigger on the torch aids in this work. Too little oxygen pressure may allow the cutting flame to waver or turn aside into the fitting.

Connections and fittings having heavy or extra heavy stubs usually demand three cuts of the dutchman. Two are spaced about two or three inches apart, while the third is opposite the first two. Each is cut as close to the threads as practical, creating three points of weakness.

One trick of the cutter experienced in reclaiming fittings by this method is to slowly deepen the long cut, keeping the flowing metal in action at all times. By holding liquid metal in the cut the danger point is made visible. Just before the grooves of the threads in the dutchman are reached, the threads of the fitting show through the hot metal in alternate spots of dark and red, made apparent by the heat differential of the metal being reduced and the metal of the fitting.

Torch tips especially designed for this type of work are available. Instead of having a vent with a uniform diameter, the vent gradually increases toward the end of the tip. This gives a comparatively soft blowing effect, rather than a pressure discharge and allows the operator to more or less flow the metal through the cut.

With the necessary cuts made, the salvage man knocks out the stub. A close-cut is placed on the dutchman and against the face of the fitting at one of the torch cuts. A few blows with a sledge breaks the stub away from the threads of the fitting, allowing it to fold at the points of weakness. In reducing heavy equipment or pieces having extra heavy pipe dutchmen the close-cut is placed on the section left between the two cuts made close together, and this piece is knocked out.



Two notches were cut into the dutchman in this case, and the close-cut has been used to break one side free. The same act frees the opposite side of the stub, allowing it to be lifted from the fitting.

Carefully Cleaned

After stubs have been removed the fittings are given a bath in a cleaning solution. If special metals are present in any of the fittings it may be necessary to use care in cleaning fluid selection as otherwise the fluid may attack the metal. Fittings may also be steamed to cleanliness.

Any parts removed from compound fittings are replaced. Some types of fittings that may not be reclaimed in their entirety may have interchangeable parts that are well worth saving as replacement. While it is seldom economically advisable to catalog and return such parts to stock, they can be held in bins for possible later use.

Cleaned fittings and connections are more subject to rust than are stock fittings. To save the surface it is best to use a paint, either sprayed or brushed. Threads should be protected with grease or dope. In fittings having interior parts, it is best to plug the ends to prevent accumulation of dust on seats or facings.

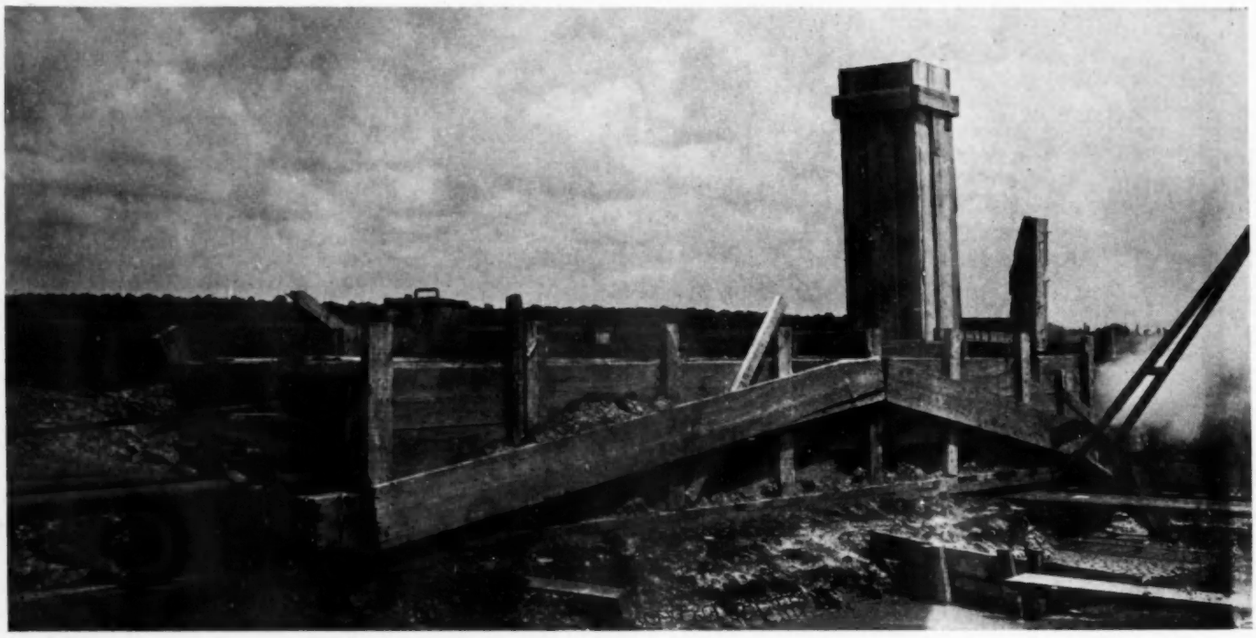
Gas Box Saves Mud

In High Pressure Drilling Area

By GORDON B. NICHOLSON, Staff Writer

WHEN high-pressure-gas sands are encountered unexpectedly while drilling, gassified rotary fluid often blows with such force that it does not contact the shale shaker, which becomes useless. Frequently, while the wall is being brought under control, the mud is blown from the casing and mud ditches, with loss of large volumes in the area surrounding the rig, at a time when most needed. As it is during drilling operations at critical depths that high pressures ordinarily are encountered, muds used at this stage generally contain quantities of chemicals and weight ingredients representing large investments. Scattering to the atmosphere not only causes cost to soar, but adds to drilling hazards by reducing mud supply at a critical time.

Drilling in an area where high-pressure gas sands are known to be present and taking every precaution to avoid their threat, General Crude Oil Company of Houston constructed a gas box at Esperson Dome, Texas Gulf Coast, to prevent losing mud by blowing. The apparatus consists of a 28-foot wooden tunnel or box, inside dimensions 4 x 6 feet, and an 8-foot chimney erected 6 feet from the end nearest the mud pits. Blowing mud is directed into the box by 4-inch pipes leading directly from the mud return annulus, its volume restricted by chokes of desired size placed on the pipes near the entrance. Sturdily constructed and heavily reinforced, the box absorbs force of the fluid stream and confines the blow, separating the gas and expelling it into the air while turning mud into the pits. Closed on the mud pit end except for a large exit door leading out at a 90° angle, the lengthy tunnel allows time for separation despite the turbulence, and gas is drawn by vacuum from the chimney near the end by blowing steam through it.



This heavily constructed gas box saves General Crude Oil Company loss of drilling mud when wells blow fluid from hole. Mud enters box through 4-inch lines and is directed into mud pit after gas is expelled from chimney.

The gas box is used only when a well attempts to blow out and the shale shaker and degasser are not sufficient to handle the pressure and volume of gas and fluid. At that time, valves on the mud line are manipulated to direct flow into one of the two parallel four-inch lines leading from well to the box, the fluid by-passing both shale shaker and degasser with flow around the casinghead sealed off, forcing all circulation returns to enter the mud pipe. The apparatus

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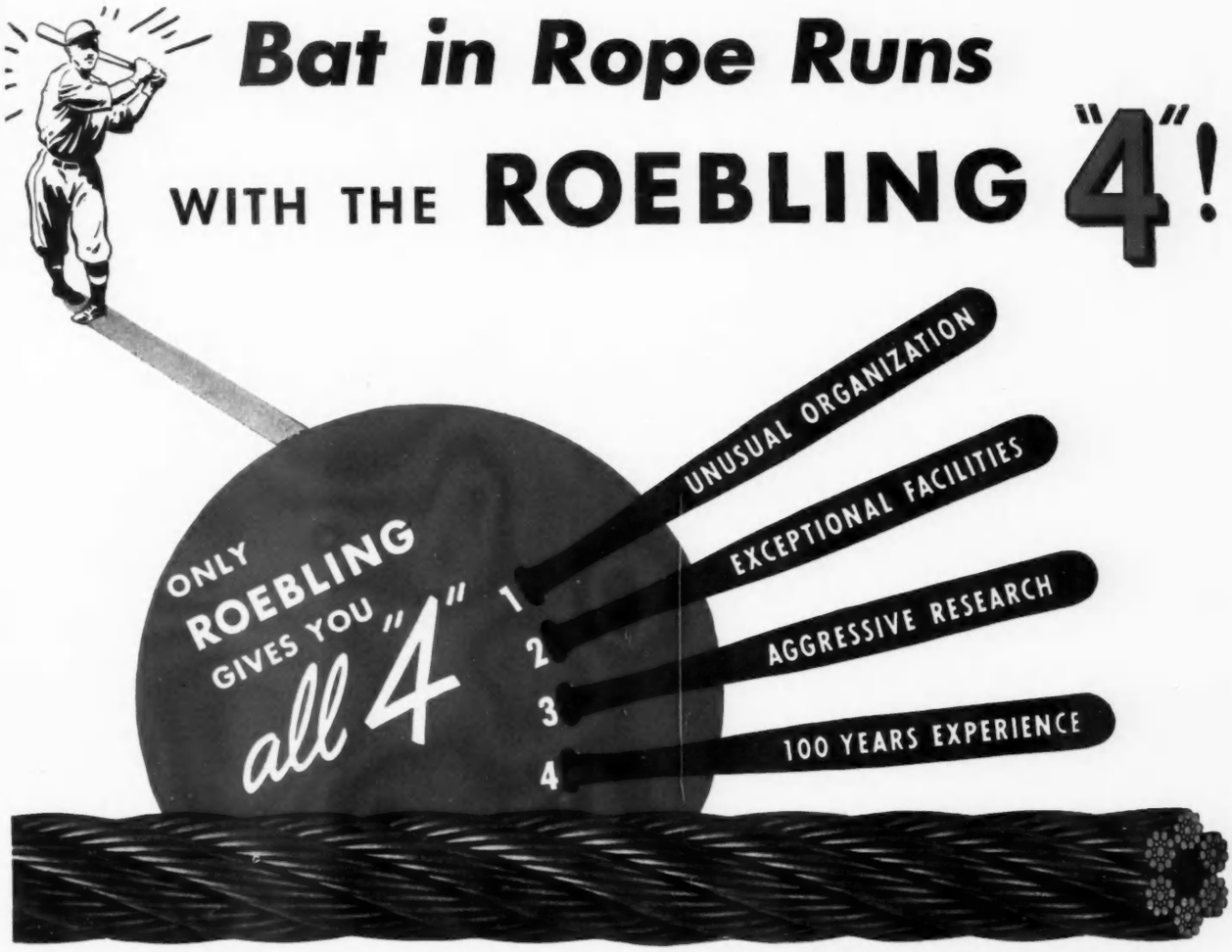

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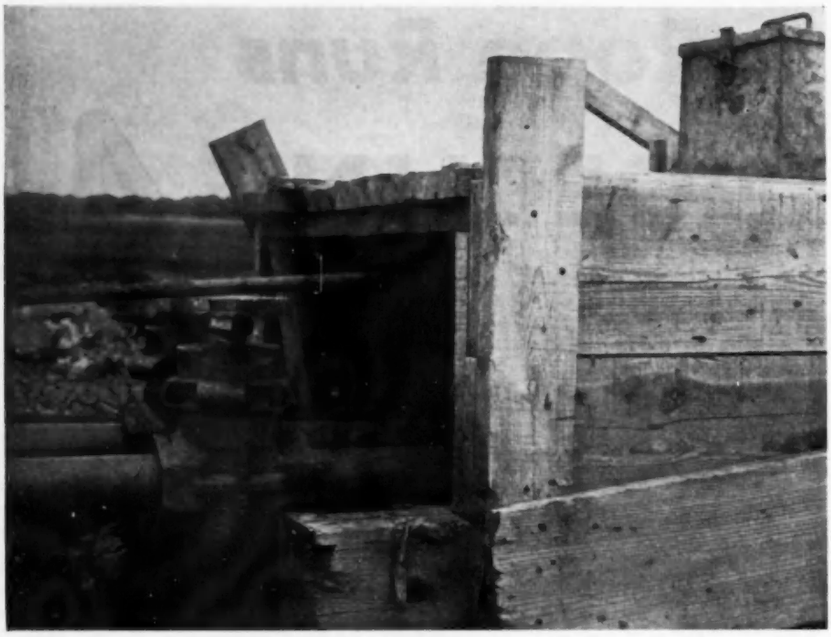
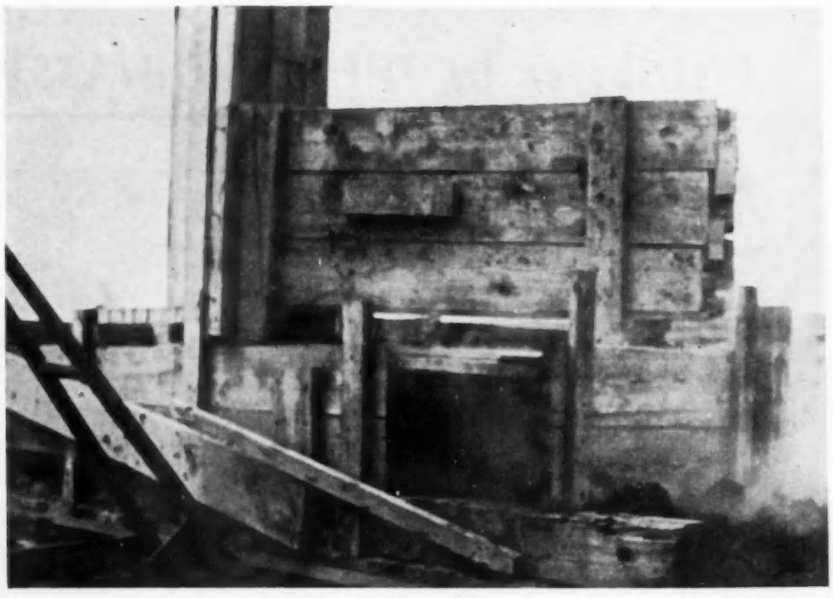


Mud lines are controlled by valves containing positive chokes to regulate flow and hold back-pressure on casing.

is located sufficiently distant from the rig for safety and non-interference with operations, and at the entrance to the box, valves on both mud lines contain positive chokes to regulate flow and govern amount of back pressure held against flow from the casing. As only one line is used at a time, chokes are easily changed to obtain proper control. A short distance beyond the choke valves, the four-inch open-end line delivers drilling fluid into the box.

Mud strikes the opposite end of the box with great force during its operation, but immediately settles to bottom for delivery to mud pit. The fluid-escape opening directs mud at right angles from the box into the mud pit, and a portable wooden ditch 6 feet long placed at the exit opening conveys fluid to the pit without waste. Near the far end of the box, the chimney expells gas into the air, and to add to its effectiveness a 1-inch steam pipe enters the box parallel to the mud lines and extends to a point beneath the chimney, blowing steam upward from the box tc create a suction that pulls the gas along with it, constituting also a fire extinguisher to offset frictional ignition hazards inside the tunnel.

The box is rugged in construction to withstand punishment of the heavy pounding it receives, and is constructed mainly of 2 x 12-inch boards in double layers, braced by short 2 x 6 sections and diagonal 2 x 12's, with the entire structure placed on substantial 8 x 10 sills used for skids when changing location. This is of particular advantage in the Esperson field, as the operators usually move rigs only a short distance, and the device is easily dragged to the next job. Company engineers declare that the box saves large volumes of drilling mud at times when it is needed most, helping to maintain usable fluid in the pits for recirculation.



Large exit door leads from end of box at 90° angle, turning mud into pit. A wooden ditch placed at the opening leads mud to pit without waste.

FIGURE 1

A pipe partially plugged with hydrates.

Dehydration In

High Pressure Gas Operations As Applied To Repressuring And

Pressure Maintenance

By R. A. CARTER, Continental Oil Company

MANY articles on natural gas hydrates have been published during the past several years, and these are to be found in complete progression in the trade journals. Some of these articles have discussed in detail the chemical and physical composition of gas hydrates, while others have dealt with practical field operating difficulties and have disclosed ways and means of overcoming such difficulties. Most articles of the latter kind have been confined largely to problems of transporting gas through commercial pipe lines over considerable distances rather than relatively short distances encountered in most field pressure-maintenance operations.

For the present we are content to let the chemists and physicists continue their controversy over whether hydrates consist of hydrocarbon molecules in combination with seven molecules of water or whether it is only six molecules of water. From the practical side, the fact still remains evident that whatever the composition of the hydrates, they definitely will cause lines to become plugged under certain physical conditions and result in no end of trouble to the operators of pressure-maintenance and repressuring systems.

Rather than attempt a definition of hydrate, Figure 1 is a picture showing a pipe partially plugged with hydrates.

It will be noticed that the hydrates begin to form on the inner wall of the pipe, gradually getting heavier until only a small orifice remains. From this point on the formation is accelerated because of expansion of the gas, and the line soon becomes completely plugged.

It is this condition with which the field man is confronted, and he must in this day and age arrive at a solution for a minimum of expenditure; and many and ingenious are the methods and devices used to accomplish the results desired. The following are a few methods:

Reduction in line pressure; heating the gas line; lubricating materials into line; partial dehydration or dehumidification.

Reduction in Line Pressure

Reduction in line pressure consists of cooling and trapping out the water at an elevated pressure, then decreasing the pressure through a regulator or control valve, resulting in a partially dehumidified gas flow. The application of this principle is limited and

Read before annual meeting of Natural Gasoline Association of America.

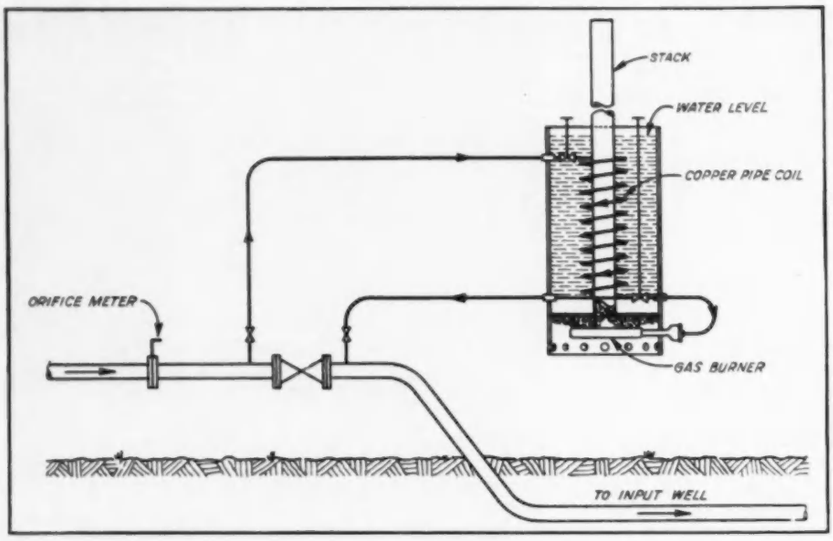


FIGURE 2

Indirect gas fired heater for small gas volume.

is of advantage only over a narrow temperature range.

Heating the Gas Line

Heating the gas flow is perhaps the most frequently used method of preventing hydrate formation in field operation. The methods used for heating gas flow are varied and sometimes ingenious. One method frequently used in pressure-maintenance operations is to transport gas direct from the compressor discharge, without cooling, to an input well, thus using the heat of compression. For large gas flows this method has been used successfully. If a line is long it can be insulated with an inexpensive material, such as sawdust or cottonseed hulls, to retard dissipation of heat.

Figure 2 shows an indirect heater used in the field to heat gas at the input well meter setting. Such equipment is relatively inexpensive and has proved satisfactory for small flows in localized areas. This is a small heater made from a piece of 10- or 12-inch casing approximately 2 feet long. A coil of copper tubing is wound around the flue which extends from the combustion chamber in the bottom of the heater up through the water. The number of feet in this coil and the size of the tube is varied to meet the rates of flow. The fuel for the burner is taken off this copper tubing to prevent its freezing. The temperature of the water in the heater is maintained below boiling to prevent excessive evaporation.

For larger flows a more elaborate heater is used, such as the one pictured by Figure 3. This is a heater made up of a shell-and-tube bundle in the upper section, and the bottom part contains a gas burner. This particular heater is also open to the atmosphere and is maintained at a temperature below the boiling point of water. Some of the installations have been enclosed and operated at a pressure of about 15 pounds, and the fuel is regulated by a valve operating on the pressure within the water compartment of the heater. The evaporation in this latter type of heater is practically negligible and has operated satisfactorily with minimum attention.

Lubricating Materials Into Line

Methods of lubricating material into flow lines are in common use, and materials used have ranged from crude oil to anhydrous ammonia. In fact, crude oil will sometimes give sufficient lubrication to the hydrate particles so that the line will operate satisfactorily.

Alcohol is perhaps most frequently used, and a typical lubricator is shown by Figure 4. This lubricator is installed in a by-pass on the line so that the pressure on the lubricator is equalized with that in the line, and the alcohol drips through the sight feed lubricator into the line by gravity. It is also shop-made, and its size depends upon the quantity of material needed per day so as to require not too frequent fillings.

Alcohol is apparently limited in its field of usefulness to lines operating under relatively low pressures. While no concrete data were obtained to substantiate such claims, it is thought probable that alcohol will itself form a hydrate at higher pressures. At pressures between 1800 and 2000 pounds, alcohol when lubricated into a pressure maintenance line actually caused the line to become plugged

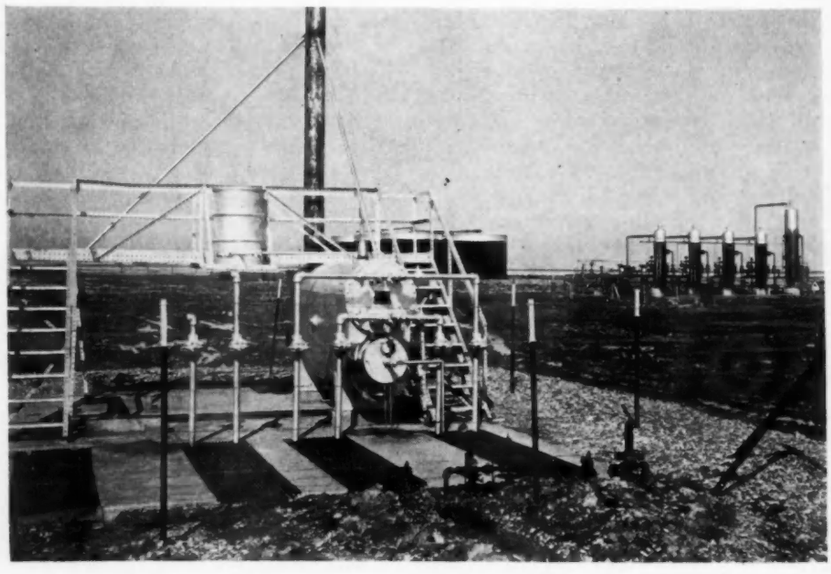


FIGURE 3

One type of heater used for large gas volumes.

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A commonly used casing program in the new Guthrie Pool, Logan County, Oklahoma, is a 5500 ft. string of 7", 22#, J-55 casing. This string costs $6,355.80 f.o.b. Guthrie. Based on the new A.P.I. minimums (75% of averages) it has a collapse safety factor of only 1.09 at 5500 ft.

But the owner of the well pictured here accepted a *Smith* Casing program . . . ran a combination string composed of 3350 ft. of 7", 22# Smith-40 and 2150 ft. of 7", 22# Smith-80 Casing. The cost was only $5,773.76 f.o.b. Guthrie—*a saving of $582.04!* And although the cost was down, the safety factors were *up*—to 1.62 and 1.76 for the S-40 and S-80, respectively.

In producing fields everywhere, operators are saving up to $1,000 or even more on each well—with safety—by using Smith Casing. For with this casing, specifications are based not on averages but on reliable *minimum* safety factors that are *test-proved during manufacture.* What is more, an exclusive Smith manufacturing process *increases* collapse resistance without increasing weight.

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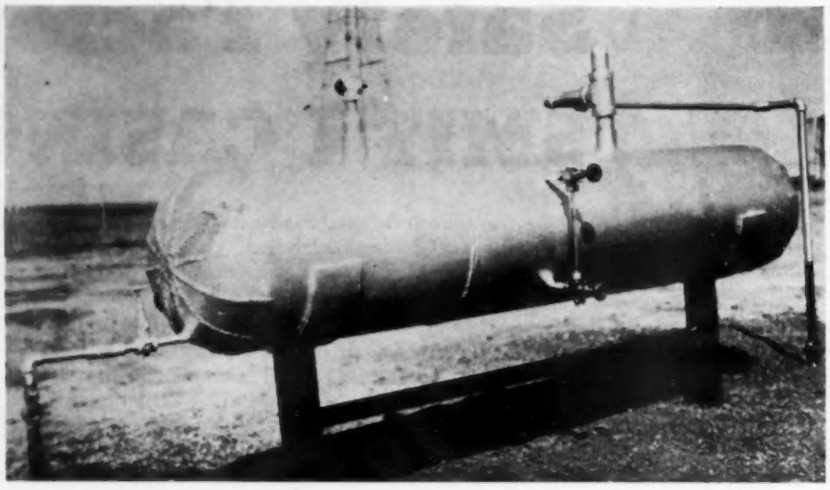


FIGURE 4

Typical alcohol lubricator installed as by-pass on a line.

more quickly than when none was used.

Ammonia has been used with varying degrees of success; however most natural gas contains appreciable quantities of carbon dioxide which readily combine with the ammonia to form ammonium carbonates in sufficient quantities to cause not only line plugging similar to hydrates but to use up such quantities of ammonia that its use is costly.

Calcium chloride brine has been used in some cases successfully; but it is not the most desirable because it is corrosive to field lines, and deposits carried over tend to plug pore space in injection wells.

Perhaps the most satisfactory use of calcium chloride has been to prevent freezing in vacuum lines in the Rocky Mountain area. Figure 5 shows a typical chloride pot in which lump chloride is used. The gas merely passes over and around the lump chloride, and the brine formed is permitted to flow to a collection drip where it is picked up and evaporated and reused. This is an economical method both as to first cost and continued operation.

Partial Dehydration or Dehumidification

Partial dehumidification is certainly the most reliable and trouble-free method of solving the hydrate problem; and two methods have been successfully employed.

A method using a solid material such as activated alumina has given good results. The equipment used in this method is shown by Figure 6.

Two towers are used in this method, so manifolded that one is used to dehydrate the gas while the other is being regenerated. The residue from the absorber passes into the top of the tower, down through the bed of activated alumina, and out the bottom to the field lines. While No. 1 tower is being so used gas is heated in a direct-fired Dutch oven and passed into the bottom of the other tower. This circuit is illustrated by the dotted lines. The temperature of the gas out of the Dutch oven is maintained at about 400° F. and is permitted to pass through the tower until the outlet temperature of the gas reaches about 250°. The hot gas is then cut out, the tower permitted to cool to around 100° or lower if atmospheric conditions will permit, and it is ready for use again when the water content of the first tower is too high to prevent further absorption by the alumina.

There are several liquids used in continuous dehydration systems, and the diethylene glycol equipment pictured in Figure 7 has proved one of the successful methods. This figure illustrates the cycle of a combination compression and refrigeration plant. Gas is taken in from the field and passed through 2 stages of compression and cooling, and the water is trapped from the hydrocarbons in the water separator. The gasoline and the gas pass out of the water separator, meet the stream of gylcol being pumped from the glycol surge tank, and the mixture flows in through the exchangers and chillers into the gasoline separator. The uncondensed gases leave the top of the gasoline separator, pass back countercurrent through the heat exchangers, and thence to the high-stage compressor for input-well injection. The gasoline and glycol in the bottom of the gasoline separator are passed through some additional heat exchangers into a high-pressure vent accumulator where some of the high fractions are permitted to escape. From the high-pressure vent

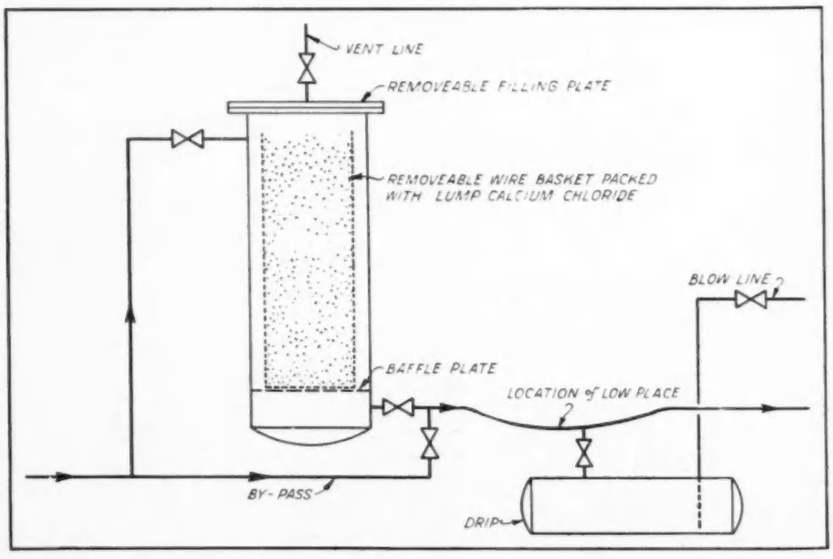


FIGURE 5

Typical installation of calcium chloride dehumidifier.

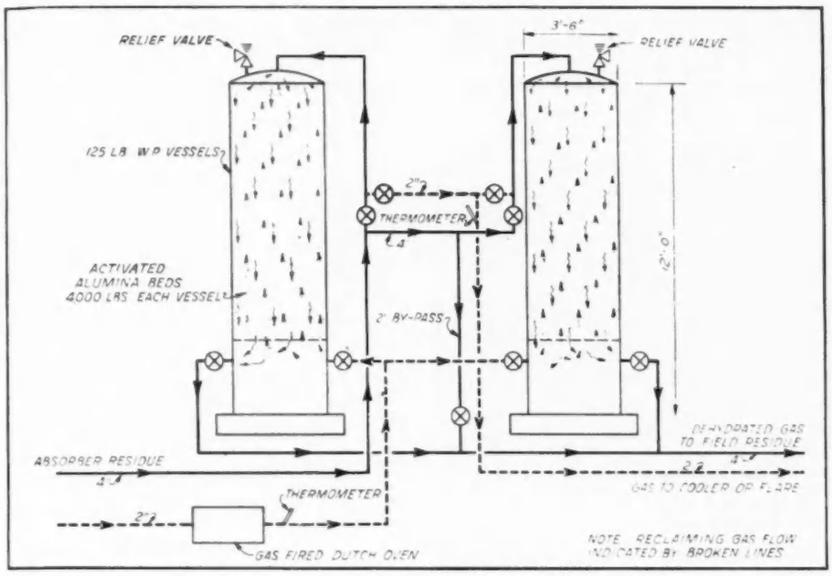


FIGURE 6

Activated Alumina Dehydration System. Capacity 4½ million cubic feet per 24 hours at 85 pounds absolute pressure and 70° F.

accumulator the glycol and gasoline pass through additional heat exchangers into an intermediate vent accumulator. The cycle is the same as in the previous vent accumulator until the gasoline and glycol reach the tank called the glycol separator. At this point the glycol and gasoline are separated by gravity, gasoline going to the raw-gasoline-storage tank and the glycol to the glycol still where it is concentrated to a strength of about 75 percent in this particular operation. After concentration it flows to the glycol surge tank, and then the cycle is begun again. A concentration of about 75 percent and a contact temperature of about 10° below zero is sufficient dehumidification to serve the purpose in this instance. It should be noted here that while the higher the concentration the lower the dew point depression becomes, it is also true that the liquid becomes more viscous, causing it to adhere to the tubes of the exchangers and chillers and create an insulating effect so that trouble is encountered. Therefore, there is a definite point at which the concentration and the contact temperatures must be maintained for trouble-free operation.

Recently encountered was a difficulty with the use of glycol that appears never to have been encountered before in that the glycol apparently is decomposing in the glycol still. Samples of this material, which is very similar in appearance to activated charcoal, were sent to various laboratories in an effort to determine the material's composition. While the consumption of glycol has not been excessive in this plant, it has been greater than the experience of other operations indicate it should be. This may be partly accounted for by the decomposition of the material as mentioned above. It has been suggested that the decomposition was caused by the presence of oxygen, hydrogen sulphide, mercaptans, or a combination of all. The formation of this material has not been rapid, but it does indicate that unless something is done to correct the formation, manual cleaning of the glycol still will be necessary in this particular case at about six-month intervals.

The operating cost of either the activated alumina or liquid system is small when installed in a repressuring or pressure-maintenance plant. Generally no additional operating labor is required, and the make-up chemicals are almost negligible. The initial investment cost on either of these systems is however a substantial amount; but since each such installation is a separate problem, it is not practical to assert that one method is less costly than the other. For relatively small rates of flow however it has generally been found that the solid material, such as activated alumina for dehydration, is lower on investment cost; while for larger flows the liquid dehydrating systems have the advantage for initial installation expenditure.

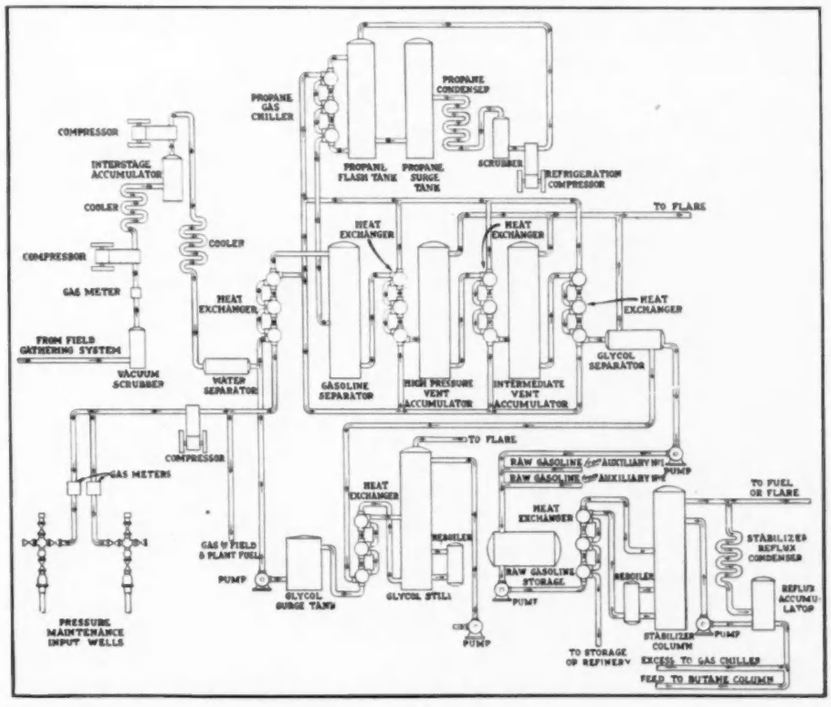


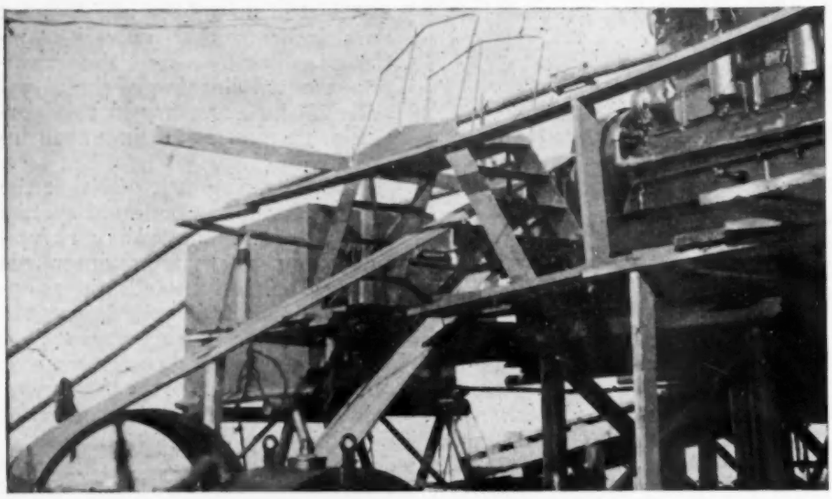
FIGURE 7

A continuous diethylene glycol dehydration system

Practical Operating Hints for

1. RIGGING UP

Steps and Platform Run Over V-Belt Connecting Mud Pumps to Engines



A stairway has been built over this V-belt to lessen the danger from an exposed belt.

IN several Mid-Continent areas, many operators prefer to place mud pumps at ground level beside the pits, while the engines driving them are placed on an elevated floor where they are more easily watched or serviced along with the draw-works multi-cylinder engines.

One operator has reduced the danger presented by the exposed position of the V-belts by building over them a raised stairway and small platform of reinforced light sheet steel. A railing of welded sucker-rod material along the top on each side of the platform also was provided.

The set-up is easily demountable for moving by merely removing several bolts from the flooring. The stairway provides reasonable protection for workmen crossing the belts, and at the same time makes replacing V-belts an easy matter.

2. SAFETY

Sets of Extinguishers Conveniently Placed

Fire extinguishers are placed around rig at strategic positions for safety factor.

FIRES started in or around oil wells usually spread quite rapidly, due to oil-impregnation of practically all wood portions of the structures.

One company makes it a rule that a group or two of fire extinguishers be placed at strategic locations around each drilling rig. The light framework of the holder is welded from sucker-rod material to make six separate compartments.

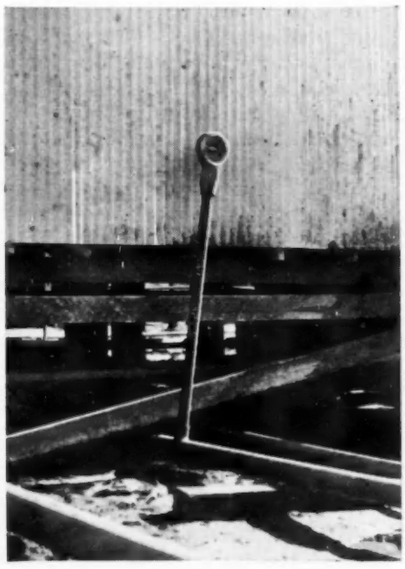
Considerable time is saved in the first few moments following discovery of a fire as all men, arriving at the same place, can immediately equip themselves with extinguishers and attack the blaze from different points at the same time. While several individual extinguishers are distributed to several of the more outlying points of the location, these larger groups are placed in plain view in open areas, usually near the more dangerous spots.

3. MUD HANDLING

Extra Gauge in View Of Man at Pumps

IN ROUTINE drilling in proven areas, it soon becomes known to superintendents and engineers just what conditions can be expected at any point in the well that may affect drilling and mud pressure conditions.

To speed up operations during long periods of drilling in the same type of formation, one company uses a second mud pump pressure gauge, installed in the line so it can be easily seen by the man attending the pumps. Duplicate instructions pertaining to the mud pressures that are to be maintained are given to the man at the pumps so that the driller can be relieved of part of the responsibility of continually checking drilling-mud pressures.



This mud-pump pressure gauge is installed in view of man tending pumps.

THE DRILLING RIG . . .

4. RIGGING UP

Single Boiler Set-Up For Several Wells

IN developing a block of semi-proven property, one Kansas operator effected a substantial saving by employing a centralized boiler location, with insulated and sheet-steel covered steam lines running in such a way that each location could be served by merely tapping in to the line with a weld-nipple at the desired point nearest the next location.

The steel sheathing consisted of 4-foot sections welded to each other along the length of the line. Provision was made for tapping-in points, however, by allowing a number of these sections, at the most likely location points, to be made to slide back over the next joint to expose the line and permit cutting of a hole for installing a weld-nipple. A small loop of sucker-rod material was welded to the top of each of these sliding sections for easy moving when needed.

Labor and expense thus was saved by not including valve outlets, plus the additional insulation covering at such points, in the original lay-out cost of the entire line. It also provided a degree of flexibility in choosing the best next location on the structure as based upon the findings in the hole just completed, and resulted in a substantial saving by not laying unnecessarily long lengths of pipe from the line to each new well location.

The sheet-steel covering for this steam line has sliding sections to permit tapping.

5. ENGINE CARE

Rubber Mounts Stop Ignition Trouble

CONSIDERABLE trouble developed in attempts to keep ignition and other engine and generator adjustments in proper running order on a 3-unit lighting plant at a certain location. It was found that engine vibration set up by any one or both of the units that happened to be in operation was sufficient to gradually cause adjustments to shift.

By installing a rubber block beneath each of the four points of contact of the individual channel iron bases with the common base on which all of the units rested, the operating trouble was practically solved, and maintenance costs on the units were sharply reduced.

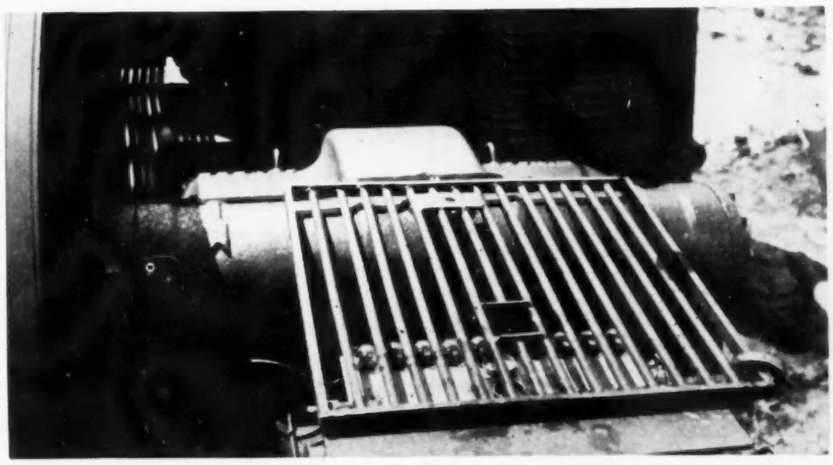
6. PUMP CARE

Lubricator Shielded By Steel Grill

A STURDY grill built by one East Texas drilling contractor protects the lubricator for his mud pump driver during rigging up and drilling operations.

The device is comprised of a framework of steel strapping, about three feet square. Welded to the inside of the frame are several rods of sucker-rod material, placed parallel and spaced at 1½ inches apart. In the section that overlays the oil opening a square open space with three-inch sides is provided to facilitate opening the tank cap and to allow placing a funnel into the oil container for filling.

To prevent dislodging the grill by pump vibration, a small steel plate with a hole cut through is welded across a few rods and placed to coincide with a similar hole in the gear-box head to permit bolting the apparatus in place. By removing the bolt, grill is easily removed for repairs on the unit.

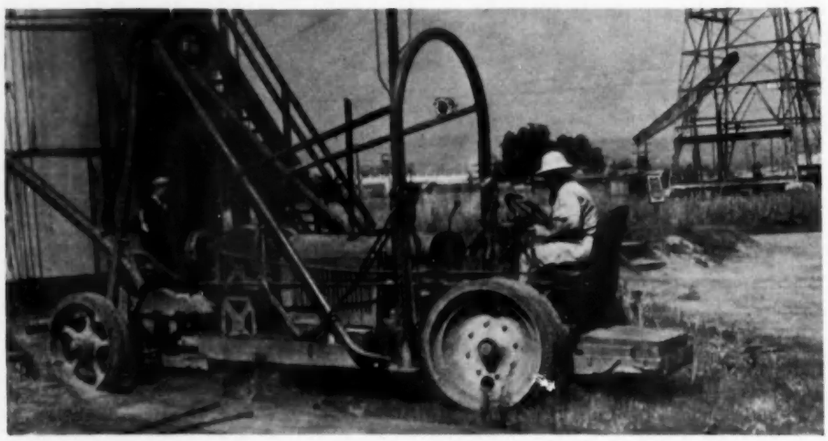


Grill made of steel strapping and sucker-rod material protects engine lubricator.

Practical Operating Hints for

1. MATERIALS HANDLING

Telescopic Boom on Winch-Equipped Tractor Is Employed in Many Lifting Applications



This winch-equipped tractor with telescoping boom finds many uses on the lease.

A DOUBLE winch-equipped tractor with a telescoping boom is used at Santa Fe Springs for handling equipment too heavy for men alone to lift. It is used for setting water meters, and with the boom extended to the top of a sampson post it is used to take down walking beams.

The boom and hoist are operated independently, with separate winches taking power from the engine at the front take-off. Each is equipped with five lines, and the turn-table has a working range of 180° so the tractor can be driven between two racks of pipe, for example, and joints easily moved from one side to the other.

The operator's seat is at the extreme rear end where all control levers, gear-shifting apparatus and steering wheel are situated. To protect the driver from swinging pipe and other objects picked up by the boom, a wicket-type guard is welded to the main frame just in front of the driving wheels. To increase the lifting power of the winches and boom without tilting the machine from behind, an extension to the frame beneath the operator's seat is filled with heavy bars of iron similar to counterweights on pumping wells. This method of counterweighting keeps the driving wheels on the ground with adequate traction, even when extremely heavy material is moved from place to place without transferring to a truck.

The boom is made by using two heavy tubes, one within the other with close clearance, with the sheaves and hooks on the outer end of inside telescoping section of pipe. Holes are bored in the inner pipe at frequent intervals through which a heavy bar is placed to lock the extension of the boom at any length required for handling material at the time.

THE practical operating hints for the drilling rig and production man, appearing in these features each week, are secured from oil fields everywhere and offer suggestions that will help to improve field efficiency and safety. The items give an excellent picture of the remarkable ingenuity being exercised by the operating divisions of the industry. Contributions to these features will be paid for at the rate of $5 for each illustrated item accepted. Address contributions to "The Editor, THE OIL WEEKLY, Houston."

2. GADGETS

Hoist Aids to Adjust Grasshopper Legs

A CHAIN hoist enables one operator easily to alter height and angle of grasshopper legs at his gun barrel and avoid using cumbersome props or braces for their regulation. A dead man of 2-inch pipe is driven into the top of the fire wall for anchor, and is reinforced by a similar pipe driven into solid ground at the foot of the dike. The two are connected by a strand of wire. The hoist is hooked to a wire on the primary dead man, and is located in a convenient place for operation by the gauger.

The hook at the end of the hoist chain is fastened to the bight formed in a small steel cable, doubled and clamped firmly. The cable extends to a snatch block fastened at the top of the gun barrel, then doubled back and at-

This chain hoist facilitates altering height of grasshopper legs at the gun barrel.

tached to the upper portion of the V-shaped legs of the hopper.

Working the hoist as lever, the gauger raises or lowers the legs from the hoist by changing tension on the cable. The desired height is obtained without necessity of propping the legs at the correct angle, and the hoist mechanism locks at the proper height unless lever is manipulated, assuring proper drainage from the gun barrel and simplicity of its regulation.

3. GADGETS

Wheels Aid to Move Step Ladder

WHERE clearance requirements or flow demands make overhead pipe lines desirable, access to the valve controls easily may be speeded up by mounting a ladder on a pair of wheels to enable one man to shift it easily.

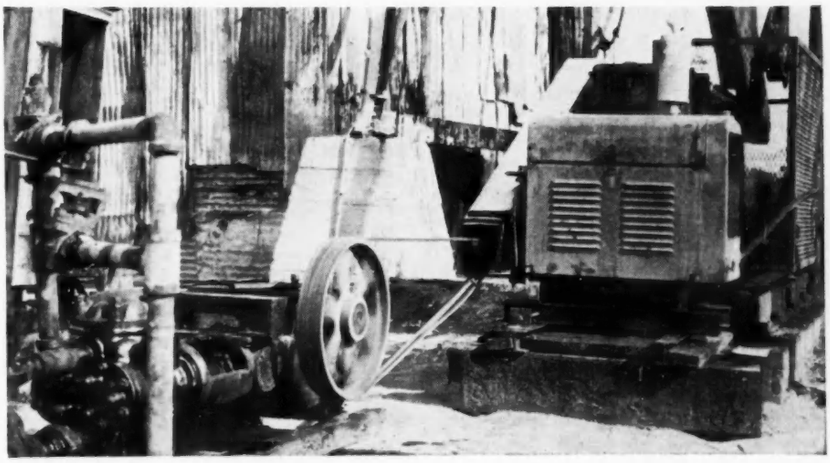
Superior Oil Company utilizes a pair of wheels from a 40-gallon fire extinguisher, attaching the axle to a brace firmly built in front of a ladder long enough to afford access to the controls.

The legs of the ladder may be lifted and the device moved vertically over short distances, or the top may be revolved to a horizontal position and the ladder then moved as a two-wheel truck.

Ladder kept handy for manipulating overhead valves is moved on two wheels.

4. EQUIPMENT CONSERVATION

Shipping Pump Derives Power From Engine of Pumping Rig Without Halting Pumping



Shipping engine, mounted near a pumping unit, utilizes power of pumping engine.

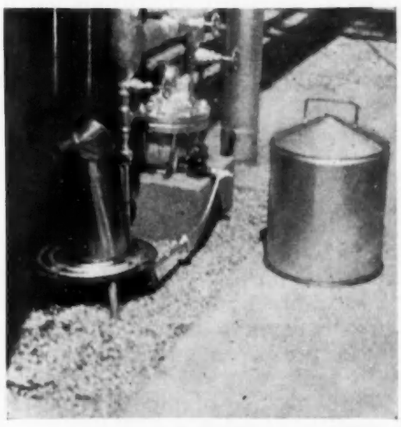
THE cost of maintaining an additional engine for a shipping pump is being saved by an operator in the Wilmington field of California by placing the pump and shipping line connections on a base a short distance away from the engine of his nearest convenient pumping well. The well pumping unit being V-belt driven, a special extra-long pulley on the engine end was made up and installed. Sufficient grooves were provided to allow the shipping pump pulley V-belts to be placed on the outer end of the engine pulley without disturbing the well pulley belts. The engine had a sufficiently high rating to power both units. When oil shipments are made, it takes but a few minutes to shut down the well, install shipping pump V-belts, and continue pumping while oil is being pumped out.

5. LUBRICATION

Steam Cylinder Oil Warmed on Coil

MANY ways have been devised to keep the container of steam cylinder oil hot so the contents will pour readily, such as setting the can on the steam chest or near the boiler, but such methods tend to dirty up the premises by drippings.

A satisfactory hot plate can be easily and economically made by bending a tight flat coil from ¼-inch pipe and attaching it to a circular metal base with supporting legs. The coil is attached to the drain petcock of a steam trap, with a needle valve slightly open, sufficient for the required amount of steam or hot water to be passed through the hot plate coil. A round five gallon can equipped with a conical top having a substantial handle is used to cover the oil can, keeping it free of dust.



Steam trap is tapped for hot water or steam to heat cylinder oil container.

WASHINGTON ROUND-UP

[*Continued from page 15*]

witnesses at hearings on the measure showed an "evident reluctance" to furnish absolute information regarding the feasibility of pipe lines; called attention to the fact that approximately 840,000 tons of steel will be required to build the two proposed lines from the Gulf to the New York-Philadelphia area, and that some 560,000 tons will be required for four other lines projected—a total close to two percent of the nation's annual steel production; and that there is no information regarding the possibility of providing machinery for the many pumping stations in such time as to carry the program through on schedule.

The two 1500-mile lines, he said, will have a capacity to replace 120 tankers but, he asserted, there are other steps which might be taken to provide the equivalent of 180 tankers.

Full utilization of all idle railroad tank cars—he estimated there are 150,000 of them—and direct routing to eliminate present circuitous hauling, would provide the equivalent of 25 tankers, Gurney figured.

The recently-enacted legislation relaxing load-line requirements will provide the additional capacity of 12 tankers.

Rearrangement of tanker routes, with total elimination of Pacific-Atlantic service, would provide the equivalent of five tankers (one ship already has been taken from the coast-to-coast service for the Gulf-Atlantic trade, and two others are to follow).

Abandonment of Mexican and Caribbean imports and substitution of nearer sources of supply would give four tankers and rearrangement of imports would equal two more.

Use of seized and interned tankers in our ports would provide five ships, and 13 more could be secured by using seized and interned tankers in Mexican and South American ports.

More direct routing from Western Hemisphere ports to Britain would provide the equivalent of eight tankers.

Through use of pipe lines east from Lima, Ohio, and use of lines to that point for rail transportation to the east coast, another 19 tankers could be replaced; two tankers could be secured through increased use of barges on the Mississippi and Ohio rivers three by completion of the Portland, Maine-Montreal pipe line, and two could be secured from the Navy (one already has been turned over).

Additionally, Gurney said, 40 tankers could be replaced by a 15 percent decrease in domestic consumption; 30 by the reversal of pipe lines in Indiana, Ohio, Pennsylvania and New York which formerly carried crude westward, and 10 by a systematic liquidation of stocks in the east, figured by him as totaling 50,000,000 barrels.

These expedients, he argued, would replace 180 tankers at much less cost than the $138,000,000 at which the two long-distance lines are figured and in much less time than will be required to build them.

In addition to the two Texas-East Coast lines, one of 24- the other of 20-inch capacity, which together would have a daily delivery potential of 475,000 barrels, Gurney listed four other proposed lines, to cost more than $125,000,000.

These would run from Lima, Ohio, to New York and Philadelphia, 700 miles of 12-inch pipe to carry 60,000 barrels of crude a day, to cost $14,700,000; St. Louis to New York and Philadelphia, 950 miles of 16-inch pipe to carry 115,000 barrels of crude, to cost $25,000,000; East Texas to St. Louis, 600 miles of 18-inch pipe to carry 135,000 barrels, to cost $62,000,000, and St. Louis to New York and Philadelphia, 900 miles of 24-inch pipe to carry 250,000 barrels, cost not given.

Puerto Rico Shortage

Puerto Rico's serious lack of oil came before the coordinator's office last week, when representatives of major companies operating in the island met with Davies to discuss the problem and work out some method of averting a threatened shortage.

The situation in Puerto Rico was described as "bad," with Standard Oil Company of New Jersey having on hand only a 25-day's supply and Shell Oil Company no oil whatever. No reports were available for the holdings in the hands of other companies, but they are believed to be negligible.

Following the conference, held July 14, it was reported that Standard would furnish Shell with oil to take care of the latter's customers, and efforts will be made to increase deliveries to the island to such an extent as to avert hardship.

Daylight Saving

In a move to save power in the southeastern states which until a few days ago suffered from a lengthy drouth, but also to conserve coal, gas and oil, shortages in which are threatened by the lack of transportation facilities, President Roosevelt on July 15 asked Congress for authority to impose daylight saving time in such areas for such periods as might be found necessary and at the same time wrote the Governors of Virginia, North and South Carolina, Georgia, Florida, Tennessee, Alabama and Mississippi, asking them immediately to proclaim daylight saving in their states.

The President's action was influenced largely by Ickes, who proposed nation-wide all-year daylight saving some weeks ago when it became apparent that there would be a power shortage in the southeast, but Roosevelt did not go as far as the Secretary of the Interior would have him go, pointing out that national year-round advanced time might be a hardship upon investors in power companies.

Rather, he told the Senate and House in identical letters, it would be preferable to adopt daylight saving time in such areas as required it although, he admitted, there may be areas where year-round advanced time might be necessary.

The southeastern states in which he urged daylight saving adoption in advance of any legislation comprise the most seriously situated area at the present moment, and the President's thoughts were directed primarily to the conservation of power.

However, gas companies in a number of eastern cities use oil in their operations, and daylight saving would result in a saving there.

The move for daylight saving is supported by Ickes, the Federal Power Commission and the Office of Production Management. Several bills on the subject are pending in Congress, at least one being introduced at Ickes' suggestion.

Does there not seem to be a prophetic quality in the selection, long years ago, of the eagle as the emblem of the Republic — not the static eagle of heraldry but the majestic, courageous and keen-visioned eagle of American mountain tops?

Is there not written in this selection a predestination to aerial supremacy?

And doesn't the course of events bear out the prophecy? The United States invented the airplane and contributed most to its development. She has resources of men, materials and machines possessed by no other nation.

Such a nation will not be long in reclaiming the leadership that is her destiny. And we are proud to contribute by serving an industry which provides life and sustenance to the mechanical eagles which mean so much to national security. Gaso Pump & Burner Mfg. Co., 902 E. First Street, Tulsa, Okla. Export Office: 149 Broadway, New York. Houston: 5716 Buffalo Speedway. Los Angeles: Service Oil Field Supply Co., 5333 S. Riverside Drive.

GASO PUMPS
for every oil industry need

HIGHLIGHTS IN THE WEEK'S NEWS

Allowables

North Texas Operators Seek Larger Allowables

A plea for increased allowables in North Texas, requests that the East Texas field not be shut in to arrest declining bottom-hole pressures, and a statement that the crude market throughout the state was in firm condition were highlights of the Texas proration hearing last week.

Tom Hunter, representing several concerns, asked the commission to reduce the number of shutdown days in North Texas and grant higher allowables to deeper wells, especially those producing from the Ellenberger, in order to meet increasing demand. He thought the commission should follow the Bureau of Mines estimate of demand, but said he noticed that those states which exceeded Bureau estimates received higher estimates for subsequent months.

Dave Gray, representing some North Texas independents, reported withdrawals from storage recently had averaged about 5000 barrels daily. To lift one shutdown day, he said, would raise production about 2500 barrels. This would be additional oil from proratable wells. He urged the commission not to lift more than two shutdown days, which would balance supply with demand, asserting further price cuts or unconnected wells would result from too large an allowable.

Sinclair Prairie Oil Company joined in the request for an increase in North Texas, Paul McDermott, attorney for the firm, reporting that Olney Refining Company needed 10,000 to 20,000 barrels of additional crude.

Sinclair has been supplying some of this oil, but because of its own shortages, it would not obtain enough for its own use.

The company put on evidence showing that Texas has consistently produced less oil than consumer demand as estimated by the United States Bureau of Mines. F. M. Blair, representing the company, testified that this was the cause for reductions of subsequent Bureau of Mines estimates. He gave a history of these forecasts, which showed that since 1937, when Texas produced 39.9 percent of the oil, the Bureau estimate had dropped to 34.4 percent now. Blair also expressed the opinion that the commission's new formula makes oil available in those districts where the demand is low and makes it unavailable in the districts where the demand is high.

East Texas Situation

A report had circulated prior to the hearing that the commission contemplated closing down East Texas for several days in order to arrest declining pressures, but this proved untrue. Lloyd Holsapple, Sinclair Prairie Oil Company petroleum engineer, testified that he did not believe a shutdown of this sort would have any effect on conservation. He pointed out that for the past three months, pressure has declined at the rate of .23 pounds per million barrels of oil produced, and that over the life of the field, the average decline has been .34 pounds per million. His figures indicated a drop of 8 pounds for the three months ending July 1. This was an average for the field based on tests of approximately 360 key wells.

Cross examination of Holsapple developed the fact that the quantity of water being produced is approximately 275,000 barrels daily now. He thought that this increased withdrawal of fluid from the reservoir was responsible, in part, for the declining pressures. The only solution to the problem he could suggest was further injection of salt water which is produced with the oil.

Commissioner Sadler pointed out that the increasing number of wells going on the pump required additional equipment, which might not be available to all operators because of the steel shortage. He saw this as one problem the railroad commission might be required to solve. Holsapple, however, said that there were other means of lifting the oil, and he did not seem to believe that the steel shortage was a serious factor.

Operators questioned Holsapple, but there was not one who advocated shuting down the field as had been rumored.

Markets Are Firm

The Texas Company's stocks are as low as they should be. For that reason, Sayles Leach, vice president, said that the company's nominations had been raised 25,000 barrels this month. He asked that 10,000 barrels of this oil be made available from East Texas, 10,000 from North Texas, and the remaining 5000 barrels from the Panhandle.

Questioned about the market, Leach expressed the opinion that since a soft spot at Corpus Christi had been eliminated recently, the market for crude oil throughout the state was firm, in his opinion.

"During this year we have withdrawn from stocks 4,850,000 barrels. Our working stocks now are about in line with our minimum requirements. Within 90 days they will be depleted by 3,300,000 barrels.

"Runs to stills last week hit an all-time high, and exceeded production by 219,250 barrels. During the same period stocks of gasoline declined. Crude stocks for the week ending July 5, totaled about 258,000,000 barrels, which is the lowest they have been since May, 1940.

"We are called upon to fill government contracts which may be let today, and on which we are required to begin delivery tomorrow. For these reasons, I feel that crude inventory is as low as it should grow," Leach said, "Because it is impossible for us to forecast our demand accurately 30 days in advance.

"While I believe that we should stay within the estimate of the Bureau of Mines, I think that the Bureau should be advised of this unusual situation. We are too low on crude now. Last month we purchased a million barrels. You will note that we have made our nominations to take care of the transportation difficulties that have arisen."

Leach pointed out that several tankers had been diverted from the Gulf Coast, and this seemed to be the cause of the difficulties he referred to. He said that movements from the company's Port Arthur plant had been taken care of so far, but that The Texas Company had not taken all the business it could get.

Commissioner Culberson suggested that the matter be taken up with the new committees appointed by the Federal Oil Coordinator, and that they present the problem to Washington. Leach did not know whether the committees would be able to handle a question of this sort, but indicated that he was anxious to have the matter properly presented, either through the railroad commission or through the committees, if that method was better.

Phillips Petroleum Company again requested shutdown exemptions for the Panhandle sufficient to allow the field to produce at the rate of 97,000 barrels daily. Danciger Oil & Refining Company, and a representative of the Panhandle Producers and Royalty Owners Association supported the Phillips' request and said that refineries in the area had insufficient oil to meet their requirements.

R. H. Cuyler presented the plan advocated by John F. Camp of San Antonio for giving one day's production of Texas oil to Great Britain. The commission indicated that it would not act on the matter until authority had been granted by the Federal Oil Coordinator. Cuyler requested a special hearing for the purpose of presenting the program, and this request the commission granted promptly.

The plan was explained at length by Cuyler to the representatives of the oil

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North Louisiana	49
North Texas	46
Oklahoma	45
Rocky Mountain	49
Southwest Texas	47
East Texas	47
Texas Gulf Coast	48
West Texas	46
Wildcat Development	55

companies who were at the hearing. Several details have not been worked out definitely, but it appeared that the hearing would be requested as quickly as this information became available.

There was no discussion of the commission's formula that would indicate any prospective change in the orders for the month of August. From the evidence it would appear that the commission may continue in effect its July order, changing the allowables only so far as necessary to meet demand as indicated by the United States Bureau of Mines. This will probably be done by increasing or reducing the number of shutdown days.

The estimate from the Bureau of Mines had not been received, but nominations filed by purchasers totaled 1,840,331 barrels. This was an increase of 45,308 barrels daily over the average of nominations filed for July.

Louisiana Boosts Allowable For Last Half of July

Louisiana Minerals Director, J. L. McHugh, last week issued a special proration order, hiking the daily allowable for the last half of July 12,278 barrels. The action followed protests by a number of operators at original July allowable. All of the increase was given to South Louisiana fields.

The first July allowable order gave the state 303,397 barrels, with 234,879 barrels allotted to South Louisiana fields. The June allowable was 319,500 barrels.

Pennsylvania Legislature Approves Compact Bill

The Pennsylvania legislature completed action on, and sent to the governor for siganture a bill calling for Pennsylvania's participation in the Interstate Oil Compact.

The House approved the measure 121 to 14 after Robert E. Woodside, Republican floor leader, told the body the bill was "not a party issue" but "vital to national defense."

Pipe Lines

Construction Contracts Let For Plantation Line

Contracts were let last week for Plantation Pipe Line Company's products line from Baton Rouge, Louisiana, to Greensboro, North Carolina.

Latex Construction Company, Houston, has been awarded contract for the first section, 250 miles from Baton Rouge to the crossing of the Alabama-Mississippi state line. Twelve-inch pipe will be used.

From the Alabama-Mississippi line across the state of Alabama, 12- 10- and 8-inch line will be laid by T. R. Jones (Oklahoma Construction Company) Dallas.

The final section, from the Alabama line across Georgia to Greensboro, North Carolina, will be laid by Williams Bros. Corporation, Houston and Tulsa. The contract calls for some 12-inch, but mostly 10-inch main line, and includes an 8-inch branch to Chattanooga.

It is expected that actual construction of the line will begin about August 15, with stocking of pipe and other preliminary work already under way in several areas.

Construction offices for the pipe line have been opened in Meridian, Mississippi, from which point right-of-way procurement and other work in connection with routing is being handled.

United to Build 140-Mile 16-Inch Gas Carrier

United Gas Pipe Line Company will start construction this month on a 140-mile line from South Louisiana gas fields across Lake Pontchartrain and east to a point north of Gulfport, Mississippi. The line will have the longest water pipe line crossing, about 25 miles from the southwestern bank of Lake Pontchartrain to Mandeville on the northern shore.

Sixteen-inch pipe will be used to a point near Gulfport, where it will narrow to 12-inch. At Gulfport, the line will tie into the company's present 12-inch carrier.

The line is needed to serve national defense industries in the area. Government priority has been given the order for pipe, now being delivered.

Hope Natural Gas Plans Louisiana-West Virginia Line

Hope Natural Gas Company plans construction of an 826-mile 20-inch natural gas pipe line from Monroe, Louisiana, to connect with the company's present system in West Virginia, Ohio and Pennsylvania.

Loring L. Tonkin, company president, told the Federal Power Commission during a hearing on application of the city of Cleveland and the Pennsylvania Public Utilities Commission for lower gate rates, that the line would be necessary to insure adequate reserves for the Cleveland, Pittsburgh and Youngstown markets, now served by the company's 3500 gas wells in Ohio, West Virginia and Pennsylvania. Estimated cost of the line is $25,000,000.

Eleven survey crews are currently in the field in connection with the project. The line would have compressor stations at 150-mile intervals, and the project would also include construction of a dehydration plant.

Push Construction of Globe Kansas-Iowa Line

Latex Construction Company, Houston, has completed over one-third of the south section of Globe Oil & Refining Company's gasoline carrier from McPherson to the Kansas-Nebraska line. B. & M. Construction Company, Oklahoma City, has completed 25 miles on a 95-mile link between the state line and Council Bluffs, Iowa, on the north section.

The line and a 370,000-barrel terminal are scheduled for completion in September.

Apache Pool Outlet

The Texas Company will provide an outlet for its Apache pool discovery, Caddo County, Oklahoma, a 5-mile line to the Rock Island tracks at Apache. Loading racks will be constructed immediately.

Work Starts on Reed City Crude Oil Outlet

Simrall Corporation has started construction of 26 miles of 6-inch welded line from Michigan's Reed City oil field east to its affiliated Sohio Pipe Line Company's Temple tank farm and pumping station. Sohio has 6-8-inch system extending into Mt. Pleasant, and south to Toledo, Ohio.

Completion of the Simrall line will provide the first direct pipe line to refinery outlet for the field. At present, Simrall, Pure Transportation and Leonard Pipe Line are operating short lines to railroad loading points near the field, which is producing 2500 barrels crude daily under proration.

Mecosta Pipe Line Company has started 25 miles of 6-inch gas transmission line from Reed City south to Big Rapids. Gentry Engineering Company, Jackson, has construction contract on both jobs.

Consumers Power Company has started right-of-way work on 14 miles of 12½-inch gas transmission line from a point seven miles west of Midland southeast to Zilwaukee. Clifford Dowding, Flint, has construction contract.

Intrastate Oil Shipments Increase Over Interstate

Intrastate shipments of crude petroleum from oil fields to refineries have grown more than 50 percent since 1934, while interstate shipments have increased only about one third, according to the United States Bureau of Mines.

In 1940, United States refineries received 1,256,311,000 barrels of domestic crude petroleum, of which 768,734,000 barrels were produced in oil fields located in the same state as the refinery. Six years before, in 1934, shipments to refineries from oil fields in the same state amounted to 494,000,000 barrels out of total domestic refinery receipts of 862,400,000 barrels. In addition to domestic crude oil, the refineries also got 42,738,000 barrels of imported oil in 1940, compared with 35,600,000 barrels in 1934.

Texas shipped more crude oil in interstate commerce in 1940 than any other oil-producing state, but Oklahoma, with the second largest out-of-state crude-oil business, shipped to the greatest number of other states. Refineries in Illinois, Indiana, Kansas, Kentucky, Michigan, Missouri, New Jersey, Ohio, Pennsylvania, Texas and West Virginia reported buying Oklahoma crude oil. Total quantity of Oklahoma crude oil shipped to other states in 1940 amounted to 97,732,000 barrels, compared with Texas shipments of 142,888,000 barrels. Illinois, Louisiana, New Mexico and Kansas also ship large amounts of crude oil to other states. The remaining oil-producing states together sold only 46,512,000 barrels to out-of-state refineries. None of these data include quantities exported to foreign countries.

Texas, besides being the largest shipper to other states, also is the largest receiver of out-of-state crude oil. In 1940, its refineries got 76,252,000 barrels of crude oil produced in other states. Pennsylvania was a close second with 76,061,000 barrels, and Indiana was third with 74,270,000 barrels. Oklahoma, second largest interstate shipper, took only 4,792,000 barrels of crude oil from other states.

Refinery Operations at Peak But Gasoline Stocks Decline

Exceptionally high demand for gasoline offset the running of a record volume of crude oil to stills and subsequent enlargement of gasoline production during the week ended July 12. Consequently, gasoline stocks in the United States continued to decline.

The industry gained further encouragement from its ability to continue to move gasoline to the East Coast area in sufficient quantities to more than exceed consumption despite the current tanker shortage, and thereby the possibility of a scarcity of this commodity along the Atlantic Coast was further postponed. Moreover, in contrast with the general trend of recent weeks, ways were found to move both light and heavy fuels to the Atlantic Coast in volumes greater than demand.

Record Crude Runs

Crude runs to stills during the week ended July 12 reached an all-time peak of 4,090,000 barrels daily, exceeding the previous record level during the week ended June 28 by 160,000 barrels. At this new rate, runs were 345,000 barrels higher than during the preceding week, and were 17.4 percent or 609,000 barrels greater than the corresponding week a year ago.

To handle this record quantity of crude, refineries in the country were operated 95.8 percent of their capacity.

Gasoline Output Up

As a result of the large crude runs, gasoline production rose to 14,020,000 barrels during the week, in contrast with 12,558,000 barrels during the previous 7-day period.

Despite the increased output, gasoline stocks continued to decline; indicating an exceptionally high rate of consumption. Gasoline stocks of the nation totaled 89,561,000 barrels on July 12, down 657,000 barrels from a week ago, 5,404,000 barrels less than 7 weeks ago, and 2.6 percent lower than a year ago. At the new level, gasoline stocks were at the lowest level since early February this year. Aviation gasoline stocks continued to rise, and at 7,577,000 barrels were 42,000 barrels larger than a week earlier and 2,239,000 barrels more than a year ago.

Light fuel oil stocks, which have been increasing subnormally for this season of the year, rose slowly despite the record refinery operation. On July 12 these totaled 37,812,000 barrels, an increase of 687,000 barrels over the previous week and up 6 percent from a year ago.

Heavy fuel oil inventories continued seriously small in relation to prevailing extraordinary consumption, although advancing slightly to 92,699,000 barrels. At this level, they were 11.8 percent lower than a year ago.

East Coast Gets Supplies

Despite the shortage of tanker facilities and continued talk of a possible shortage of gasoline along the Atlantic Seaboard, gasoline continued to be moved to that area in quantities exceeding consumption. Even more encouraging was the increase that took place in fuel oil inventories in the East.

East Coast light fuel oil stocks were up 805,000 barrels to 10,835,000 barrels, in contrast with a gain of only 913,000 barrels during the preceding 6 weeks. However, this was still below the normal rate of increase for this period of the year.

For the first time in some weeks, stocks of heavy fuel oils on the East Coast registered a gain, rising from 7,911,000 to 8,262,000 barrels. During the previous six weeks, stocks of residual fuels on the East Coast had declined 556,000 barrels.

Stocks of gasoline in the Eastern area of the United States were up 666,000 barrels to 22,364,000 barrels, and within the past seven weeks have increased 1,207,000 barrels. The advance last week followed a 1,190,000-barrel decrease the preceding week that had lead many to believe the predicted shortage along the Atlantic Coast was setting in.

Thus far, the anticipated accumulation of gasoline on the Texas Gulf Coast has failed to occur, and the movement of large volumes to the East last week brought a further reduction that amounted to 893,000 barrels. Currently, Texas Gulf Coast gasoline stocks stand at 11,800,000 barrels. Light fuels in the Texas Coast area also declined during the week, dropping from 7,322,000 to 6,882,000 barrels. Heavy fuels advanced from 7,854,000 to 7,971,000 barrels during the period.

Trends of Operations and Changes in Stocks

Figures are from American Petroleum Institute weekly reports, except those on crude stocks, which are from Bureau of Mines weekly reports

WEEK ENDED	Crude Oil Production (Barrels Daily)	Crude Runs to Stills (Barrels Daily)	Crude Oil Stocks (Barrels)	Gasoline Stocks (Barrels)	FUEL OIL STOCKS	
					Gas Oil & Dist. Fuels	Residual Fuel Oil
1938:						
November 12	3,243,250	3,180,000	273,394,000	[6]67,551,000	34,175,000	120,491,000
December 10	3,245,100	3,150,000	[2]269,509,000	68,687,000	32,068,000	118,711,000
1939:						
April 22	3,526,700	3,280,000	277,156,000	[2]87,769,000	21,085,000	105,035,000
April 29	3,568,200	3,405,000	278,440,000	86,794,000	[7]25,844,000	[7]108,409,000
May 6	3,580,900	3,275,000	[3]278,607,000	86,216,000	26,167,000	108,597,000
August 5	[1]3,909,400	3,445,000	268,982,000	76,431,000	35,601,000	114,512,000
August 26	[5]1,690,800	3,475,000	246,982,000	73,475,000	37,722,000	116,237,000
October 7	3,435,850	3,505,000	231,564,000	[6]71,152,000	38,549,000	114,397,000
October 21	3,771,550	[2]3,650,000	[3]229,127,000	72,122,000	39,358,000	115,060,000
1940:						
January 27	3,611,600	3,470,000	237,339,000	87,914,000	27,407,000	103,015,000
February 24	3,732,100	3,490,000	240,836,000	96,719,000	25,390,000	103,419,000
March 30	3,841,250	3,585,000	250,561,000	101,370,000	23,778,000	105,081,000
April 20	3,858,550	3,535,000	254,881,000	[1]102,817,000	24,779,000	103,323,000
April 27	3,845,250	3,555,000	256,670,000	102,452,000	24,997,000	102,552,000
May 25	3,835,650	3,580,000	259,330,000	100,297,000	28,356,000	104,015,000
June 22	3,846,450	[2]3,690,000	260,891,000	97,276,000	32,751,000	104,683,000
June 29	3,639,550	3,625,000	262,059,000	95,142,000	33,590,000	104,486,000
July 27	3,690,400	3,555,000	262,579,000	90,173,000	38,981,000	105,924,000
August 31	3,501,350	3,575,000	265,865,000	85,393,000	44,766,000	108,774,000
September 28	3,799,950	3,600,000	263,609,000	82,273,000	47,986,000	108,450,000
October 26	3,640,300	3,565,000	262,746,000	80,891,000	[4]8,893,000	108,475,000
November 9	3,584,200	3,510,000	261,631,000	[6]79,847,000	48,408,000	107,687,000
November 30	3,335,050	3,510,000	262,679,000	80,284,000	46,212,000	106,618,000
December 28	3,385,500	3,585,000	261,552,000	83,274,000	42,266,000	102,620,000
1941:						
January 25	3,599,100	3,625,000	260,093,000	88,762,000	39,039,000	100,297,000
February 22	3,629,650	3,590,000	261,783,000	95,812,000	34,381,000	98,631,000
March 1	3,632,250	3,585,000	263,176,000	96,917,000	33,725,000	97,510,000
March 29	3,746,550	3,625,000	266,187,000	[9]99,727,000	29,949,000	96,152,000
April 26	3,726,850	3,675,000	266,149,000	96,647,000	29,543,000	94,732,000
May 31	3,786,100	3,699,000	262,356,000	93,845,000	33,524,000	92,757,000
June 7	3,816,700	3,880,000	260,956,000	92,522,000	34,305,000	93,384,000
June 14	3,822,750	3,755,000	260,464,000	92,478,000	35,060,000	93,182,000
June 21	3,857,600	3,845,000	259,142,000	91,916,000	35,736,000	93,281,000
June 28	3,847,250	3,930,000	259,399,000	91,461,000	35,732,000	92,896,000
July 5	3,658,200	3,745,000	258,070,000	[9]90,218,000	36,925,000	92,635,000
July 12, 1941	3,870,750	[4]4,090,000	.....	89,561,000	37,812,000	92,699,000
July 12, 1940	3,560,750	[8]3,481,000	[4]261,632,000	91,971,000	35,653,000	105,103,000
Change in past year	+8.7%	+17.4%	—1.3%	—2.6%	+6.0%	—11.8%

[1] All time peak. [2] Peak for year. [3] Lowest since April, 1922. [4] Stocks, July 6, 1940.
[5] Lowest since October, 1922, due to shut down of six Mid-Continent states. [6] Lowest for year
[7] Prior to April 29, 1939, data did not include stocks at terminals, in transit, etc., except in California
[8] June-July, 1940, daily average.
[9] Revised upward by 154,000 bbl. Unfinished Stocks in Oklahoma-Kansas-Missouri District.

Gas and Lube Advances Feature Week's Market

Further advances in gasoline and lubricating oils provided additional strength to oil markets last week.

Increases in the Middle West ranged from ⅛ to ¼ cent, with the same advance on the Gulf Coast. Minor changes in the Mid-Continent refining district, and on the Atlantic Seaboard were upward.

Natural gasoline, which increased ⅛ cent a gallon a week ago, gained another ¼ cent.

The gradual improvement in lubricants, under way for several months, continued, with minimum quotations up 1 cent in Western Pennsylvania, and advances of ¼ to ½ cent in the Mid-Continent.

Heavy fuel oils, in good demand, held increases of 5 to 10 cents experienced a week ago, one grade in the Mid-Western market advancing an additional 2½ cents. Bunker C fuel oil held advances of 5 cents on the Gulf Coast

and 10 cents on the Atlantic Seaboard, made a week earlier, and were unchanged last week.

Wholesale prices for kerosene, light fuel oil and diesel oils remained unchanged, although they continued in good demand.

Three-Day Texas Shutdown Drops Production Sharply

United States crude oil production declined sharply during the week ended July 19, as Texas fields were shut down for three days, compared with only two days the week before. The nation's output averaged 3,687,100 barrels daily in the new period, a decrease of 178,850 barrels from the average of the previous week and 160,000 barrels less than the indicated daily average market demand for domestic crude during July, as estimated by the United States Bureau of Mines.

Texas fields were closed in on July 13, 16 and 19, and consequently, their production for the week averaged only 1,234,100 barrels daily, compared with 1,439,300 the previous week when there were only two shutdown days.

The large decrease in Texas, coupled with declines in some other states, materially outweighed increases recorded in the remaining states.

W. R. THIXTON, in charge of the land department for Sinclair Prairie Oil Com-Company at Houston, has been transferred to Tulsa to assume duties formerly handled by the late Charles B. Coon.

Wholesale Prices of Refined Products in Principal Markets

	Range Last Week (Cents a gal.)		Changes from Week Before	
REFINED GASOLINE				
Oklahoma Refineries:				
60 Octane and Under	5¼	5⅝	...	...
63-66 Octane	5⅝	6	...	...
72-74 Octane	6	6⅜	...	+¼
80-82 Octane, Ethyl	6½	7¼	...	...
Mid-Western Tank Car:				
60 Octane and Under	5⅛	5⅝	...	—⅛
63-66 Octane	5⅝	6	—⅛	...
72-74 Octane	6	6⅜	...	+⅛
80-82 Octane, Ethyl	7⅜	7⅜	+¼	+¼
New York Harbor:				
68-70 Octane	8	8¼	...	...
72-74 Octane	8	8½	...	...
Min. 80 Octane, '39 Research	8½	9	+½	...
Gulf Coast:				
60 Octane unleaded	5⅛	5⅝	...	+⅛
65 Octane unleaded	5½	5⅞	...	+⅛
68 Octane unleaded	6	6¼	+¼	...
70 Octane unleaded	6	6¼	...	+¼
72-74 Octane leaded	6	6¼	...	...
Min. 80 Octane, '39 Research	6⅛	6½	—⅛	...
NATURAL GASOLINE				
Grade 26-70:				
F.O.B. Group 3	3⅝	3⅝	+¼	+⅛
F.O.B. Breckenr'ge, Tex.	3¼	3¼	+¼	+¼
KEROSENE				
Oklahoma Refineries:				
41-43 water white	4⅜	4¾	...	...
42-44 water white	4½	4⅞	...	...
Mid-Western Tank Car:				
41-43 water white	4⅜	4¾	...	...
42-44 water white	4½	4⅞	...	...
New York Harbor	5¼	5½	...	...
RANGE OIL				
At Oklahoma Refineries	4	4⅜	...	...
In Mid-Western Market Group 3, basis	4	4	...	...
LIGHT FUEL OILS				
Oklahoma Refineries:				
No. 1 straw	3½	4¼	...	...
No. 3	3⅜	3⅝	...	...
Mid-Western Tank Car:				
No. 1 white	3¾	4⅛	...	...
No. 3	3¼	3½	...	...
New York Harbor:				
No. 1	5¼	5½	...	...
No. 3	4⅞	4⅞	...	...

	Range Last Week (Per Bbl.)		Changes from Week Before	
HEAVY FUELS				
Oklahoma Refineries:				
No. 6	$0.80	$0.85	...	...
Mid-Western Tank Car:				
No. 5	.85	.85	...	...
No. 6	.85	.87½	..	+.02½
New York Harbor:				
No. 5	1.65	1.75	...	...
No. 6	1.35	1.45	...	...
BUNKER C FUEL OIL (Per barrel, ships' bunkers)				
Gulf Coast	$ .85	$ .95	...	...
New York Harbor	1.35	1.45	...	...
DIESEL OIL (Per barrel, ships' bunkers)				
Gulf Coast	$1.55	$1.55	...	...
New York Harbor	2.00	2.00	...	...
Los Angeles Basin 27 gravity	1.10	1.26	...	+.01
LUBRICATING OIL (Cents a gal.)				
Oklahoma Refineries:				
Bright Stock, 150-160 viscosity at 210°, 10-25 pour test	19½	20½	...	+½
Neutral oil pale No. 3 Color, 150 viscosity at 100°, 0-10 pour test	11½	11¾	+¼	+¼
Western Pennsylvania:				
Bright Stock, 145-155 viscosity at 210°, 25 pour test	24	25	+1	...
Neutral Oil No. 3 Color, 150 viscosity at 70°, 25 pour test	30	36	+1	...

United States Crude Oil Production

Estimates Compiled by The OIL WEEKLY

DISTRICT OR STATE	Bureau of Mines Estimate of Daily Demand (July)	State Allowable (Barrels Daily in July)	BARRELS DAILY FOR WEEK ENDED July 12	July 19
TEXAS—				
Texas Panhandle	...	...	83,800	84,200
North Texas	...	...	103,400	101,000
West Central Texas	...	...	31,200	30,100
West Texas	...	...	264,900	221,050
East Central Texas	...	...	84,700	81,000
East Texas Field	...	...	373,400	294,650
South Texas	...	...	213,300	180,300
Texas Gulf Coast	...	...	284,600	241,800
Total Texas	1,324,000	1,300,749§	1,439,300	1,234,100
CALIFORNIA—				
Long Beach	...	...	38,000	38,600
Midway-Sunset	...	...	49,500	49,900
Kettleman Hills	...	...	36,900	39,400
Wilmington	...	...	80,100	84,200
Others	...	...	431,600	429,800
Total California	624,800	603,000*	636,100	641,900
OKLAHOMA—				
Oklahoma City	...	...	83,400	92,200
Seminole Area	...	...	109,650	109,100
Others	...	...	221,050	220,450
Total Oklahoma	498,500	415,000	414,100	421,750
ILLINOIS—				
Salem	...	...	85,700	83,500
Louden	...	...	61,500	62,500
Centralia	...	...	10,400	10,000
Other New Pools	...	...	175,800	175,200
Old Pools	...	...	11,300	12,300
Total Illinois	384,800	...	344,700	343,500

DISTRICT OR STATE	Bureau of Mines Estimate of Daily Demand (July)	State Allowable (Barrels Daily in July)	BARRELS DAILY FOR WEEK ENDED July 12	July 19
LOUISIANA—				
North Louisiana	...	...	77,200	74,400
South Louisiana	...	...	240,300	243,900
Total Louisiana	304,000	310,413‡	317,500	318,300
KANSAS	225,300	237,400	233,800	239,050
NEW MEXICO	108,600	108,600	110,300	107,500
EASTERN STATES—				
Pennsylvania Grade	49,300	...	72,600	72,200
Others, Eastern	52,800	...	18,500	18,500
Total Eastern States	102,100	...	91,100	90,700
MOUNTAIN STATES—				
Wyoming	88,400	...	83,400	83,300
Montana	19,900	...	19,400	19,400
Colorado	5,100	...	4,000	3,850
Total Mountain States	113,400	...	106,800	106,550
MICHIGAN	37,200	38,000†	39,100	39,400
INDIANA	22,200	...	21,200	21,300
ARKANSAS	77,000	73,738	72,500	72,300
MISSISSIPPI	21,000	...	34,500	45,500
NEBRASKA	4,200	...	4,950	5,250
‡Total 8 Prorated States	3,199,400	3,086,910	3,262,700	3,074,300
Total United States	3,847,100	...	3,865,950	3,687,100

* Recommendation of Conservation Committee of California Oil Producers.
† Estimate of actual production under prescribed regulations, which do not fix a definite state total allowable.
‡ Texas, California, Oklahoma, Louisiana, Kansas, New Mexico, Arkansas, Michigan.
§ Texas Railroad Commission's es imate of actual net daily production, allowing for usual under production of 3½ percent under net allowable, which at the beginning of July, is calculated at 1,347,926 barrels daily. However, allowable normally increases as new wells are completed. Under July order, most Texas fields were ordered shut down July 4, 5, 6, 12, 13, 16, 19, 20, 26, 27 and 31. Panhandle was ordered shut down July 5, 12, 19, 26 and 31.
‡ Daily allowable for last half of July increased 12,278 barrels, all given to South Louisiana fields, making average daily allowable for week 310,413 barrels

World-Wide Developments

Bolivia Purchasing Equipment For State Development

Working with the first $100,000 obtained from a $600,000 appropriation made last March by the Bolivian government, Yacimientos Petroliferos Fiscales Bolivianos, government oil company, is purchasing equipment needed to promote the nationalized oil industry. Raul Zumelzu, president of the Bolivian Y.P.F., has been in the United States buying field equipment.

The government's plan, laid out in connection with the appropriation, calls for purchase of equipment for wells located but not yet drilled, and equipment for cleaning present wells, purchase of tank trucks and tanks for trucks at present hauling oil in barrels, purchase of railroad tank cars, erection of storage tanks, completion of a distributing plant at La Paz, and construction of other plants at Cochabamba, Mojo and Sucre.

In the Sanandita area, the government was drilling a well last March, and locations had been made for two more. A productive well was capped to await arrival of machinery needed for production. In the Camiri field, drilling has been held up by lack of equipment. Production from three wells in the Bermejo field was held in because of inadequate transportation.

A railroad from Camiri field to Sucre is under construction. Final agreement has been signed between Argentina and Bolivia whereby Argentina will build a railroad between Bolivia's Sanandita field to Yacuiba, Argentina.

It is also reported that Argentina and Bolivia have agreed upon a pipe line from Bermejo, Bolivia, to Oran, Argentina, but Argentine government representatives in New York last week had no information on this report.

Two Geophysical Units Active In Brazil Coastal Areas

Bureau of Mines data summarize present drilling in Brazil, where exploration and drilling are underway in hope of discovering commercially productive reserves.

Coastal areas of Bahia and Alagoas states are receiving considerable attention. Under agreement with the National Petroleum Council, United Geophysical Company of California is making a survey in these states, employing two units. The region consists of a sediment belt 20 miles wide, having a northeast strike. Oil has been found in exposed Cretaceous to Triassic beds, which may also exist in depth near the coast line. Total thickness of the sediment in some places is regarded as nearly 5000 feet.

The Lobato field, in Bahia, has two producers, and drilling continues. At Camamu, following drilling of two dry holes to 2600 and 1170 feet last year, a third well last month was drilling below 1800 feet. Companhia Petrolifera Copeba was importing an American rig for another well in Bahia. Near Aracaju, Sergipe state, Companhia Itatig was reported drilling below 2600 feet.

Yet to be studied is that part of the Amazon basin in the territory of Acre and bordering Peru. The same structures being developed in Peru at Ganzo Azul on the Pachitea river are considered to extend northeast into Brazil. Another region to be explored is the Parana synclinal basin, embracing the southern states of Sao Paulo, Parana, Santa Catarina and part of Rio Grande do Sul. The basin is reported traversed by several geoanticlines. On the eastern edge of the basin are sediments similar to the productive formations in the northern fields of Argentina and Bolivia. Poor transportation facilities and presence of extensive flows of igneous rock have hitherto discouraged development of the basin.

South American Drilling

Mene Grande Oil Company was moving rig from Santa Rosa 3, eastern Venezuela, to a nearby new location. Santa Rosa 3, below 7170 feet, was temporarily suspended. In northern Anzoategui state, the company's Quiamare 1 was drilling below 6360 feet, in dense formation, while Santa Rosa M-1 was drilling below 6150 feet.

Ultramar Sociedad Anonima Petrolera Argentina was reported last week as having abandoned Piedra Clavada 1, wildcat in Santa Cruz province, Argentina, at 4025 feet. Subsequent advices declared drilling was only temporarily suspended.

Move in Materials for Test On New Colombia Concession

Preparations for a test on a recently acquired 47,784-hectare concession in upper Magdalena River valley of Colombia are reported under way by Shell Petroleum Company of Colombia. Shell obtained the property by transfer from the original concessionaire, Compania Anglo-Colombiana de Petroleo, transfer recently being approved by the Ministry of Mines and Petroleum. Field equipment is reported being unloaded at El Banco, on the Magdalena River, about 40 miles south of the tract.

El Condor Petroleum Company's bid for a 247,000-acre concession in the Colombian llanos has been accepted by the government.

On the Barco concession, Colombian Petroleum Company was coring South Sardinata 1 two weeks ago at 3964 feet.

Petroleos Mexicanos Financial Condition Improves

Some improvement in the financial condition of the Mexican national oil company, Petroleos Mexicanos, has been reported by Minister of Finance Eduardo Suarez. Resumption of the company's payments of debts is declared under way.

Reduction in operating expenses was undertaken by the government following a study of a critical situation in July, 1940. A government board authorized a 10 percent cut in salaries at the higher levels, reduction of overtime payments, dismissal of surplus workers and suspension of housing allowances for better-paid employes. The treasury aided by waiving collection of taxes due from the company, although debiting them against future income.

Petroleos Mexicanos is evidently still in the red, however. The general manager, in a report last March, pointed out that last December the government moved to lend the company 60,000,000 pesos to cover capital expenditures made from 1938 to 1940. This loan, to be partly amortized by earnings in the current year, was granted in an effort to enable the company to establish a better credit position for future operations.

Turner Valley Production Down Late in June

Turner Valley's crude oil production dropped late in June, according to the Alberta Conservation Board.

The field averaged 24,970 barrels daily during the week ended June 30, compared with 25,915 barrels during the previous week, a decline of 945 barrels.

Wells recently completed are expected to boost the crude oil yield considerably this month to provide a 26,000-barrel daily average throughout July.

Alberta Board Reduces Gas Production in Turner Valley

To conserve remaining energy in Turner Valley and maintain crude production required for war needs in the field's marketing area, the Alberta Conservation Board has reduced the total quota of the gas cap area of the field to 50,000 feet daily, a cut of 9,000,000 feet from the June quota.

Of the 50,000,000 feet permitted in July only 48,046,000 feet will actually be produced because of an open-flow limitation imposed by the board. The present quota compares with 94,800,000 feet permitted in February of this year.

Alberta Eases Tax Rulings For Oil Companies

The Alberta income tax department announced easing of taxation on oil companies, bringing provincial concessions closely in line with concessions previously made by the Dominion government.

Under the new provincial ruling, geological survey and other exploratory costs may be written off in the year in which they are incurred. Previously these costs were considered as capital, and were not allowable deductions for income taxes. Development costs, including the costs of drilling unproductive wells in 1940 and subsequent years, may be written off at a maximum rate of 33-1/3 percent per annum. Depletion will be allowed in an amount equal to 25 percent of the net income from production.

Production equipment, including casing, may be depreciated at a maximum rate of 20 percent per annum, compared with 15 percent previously. Rotary drilling equipment, when in constant use throughout any year, may be written off at a maximum rate of 33-1/3 percent of cost for both drill-pipe and equipment, compared with 30 percent formerly.

The new ruling also provides that gains on disposal of production equipment or salvage by abandonment of well shall be added to income in the year such gain or salvage is realized.

U. S. FIELD OPERATIONS

Illinois Basin

Discoveries Boom Drilling In Jefferson and Wayne

Drilling booms in Jefferson and Wayne counties following completion two discovery wells; new pay for Roland field, White County; Wayne County wildcat showing small producer; Saline County wildcat swabs oil.

Jefferson County: Kingwood Oil Co.'s First National Bank of Woodlawn 1, SE SE SW 35-2s-1e, 448 bbls first 24 hours, 418 bbls second, 20 qt shot Benoist 1963-81 ft; largest completion drilled in county. Seven tests started in immediate area by Kingwood, Gulf, Texas, Magnolia, Eddie Self and W. C. McBride. Kingwood prepared abandon R. Sledge 1, SW 20-1s-4e, 2886 ft. J. A. Burhan's Murphy-Pearce 1, W½ SE SW 35-4s-3e, wildcat, abandoned 3100 ft, elevation 450 ft, St. Genevieve topped 2976 ft.

Wayne County: Wiser Oil Co.'s Hillard 1, S½ SE SW 27-1n-6e, discovery, 1968 bbls under partial choke, natural, McClosky 2994-96 ft, first 24 hours; bottomed 3087 ft. Nearby tests started by Wiser, Texas, Shell, Illinois Producing Co., 10 drilling. Texas Oil Co.'s Draper 1, N½ NW SW 8-3s-6e, wildcat, swabbed 1 bbl oil, 2 gals water hourly, McClosky, bottomed 3469 ft, Glen Dean 2670 ft, St. Genevieve 3275 ft.

White County—N. V. Duncan and Bruce Martin's Baker 1, NE NW NW 14-7s-8e, Roland field, 400 bbls daily Aux Vases 2898-2911 ft, 30-qt shot, new pay. Northwest outpost, Cronin & Anderson's C. Mitchell 1, NE SE SW 11-7s-8e, waiting on cement to test Aux Vases 2911-2930 ft. Pure's Kissner 1, SE SE SE 7-6s-9e, ½-mile east Stokes field, pumped 135 bbls oil, 24 water, 24 hours, Benoist 2803-2816 ft, first production from horizon in area. Southwest outpost New Harmony field, Millison Bros.' Mary Thompson 1, NW NW SW 30-5s-14w, abandoned 3115 ft.

Marion County: Swan-King Oil Co.'s Kotva Heirs 1, C S½ SW NW 36-4n-2e, drilling plug test Benoist 1931-43 ft, also shows Aux Vases and Rosiclare. Kotva Heirs, 2330 feet west Kotva 1, drilling 966 ft.

Saline County: Thompson Drilling Co.'s Reich 1, NE SW NE 8-8s-7e, 300 ft fluid, mostly oil, some sulphur water, 1000 gals acid McClosky, about 2990 ft, storage being erected; 2½ miles northwest Potter's Sutton 1, SE SE SW 28-8s-7e, where casing set 5 weeks ago to test Palestine sand 1956 ft, but not yet drilled in.

Williamson County: Arrow Drilling Co.'s Fuller 1, NW SW SE 31-8s-4e, abandoned after testing light shows in Cypress, Benoist, Renault and McClosky.

Washington County: Gulf Refining Co.'s Maschoff 2, NE SE SW 10-1s-1w, north outpost new North Irvington field, pumped 201 bbls oil, 1 bbl water, 24 hours, Benoist, substantiating theory pool will have northwest trend. Ohio Oil Co.'s Poggenmueller 2, SW SE 10-1s-1w, northeast outpost. abandoned.

Hamilton County: Ohio Oil Co.'s First National Bank of Enfield, E½ SE SW 3-5s-7e, abandoned after testing McClosky 3450 ft, total depth 3585 ft. Shell's Ventress 1, SW SW SE 12-6s-5e, drilling 2950 ft, topped Cypress 2826 ft, sand 2837 ft, no shows.

Richland County: R. Werner's Smith 1, C W½ NE NW 5-2n-9e, cored shows McClosky oil 3033 ft, deepening.

Oklahoma

Wilcox Strike in Payne Cleveland Tests Good

Payne County was revived by Wilcox discovery; Cado County wildcat staked with 10,000-ft contract on seismographed and core-drilled structure, two Cleveland County wildcats showed promise; Tecumseh Lake pool was defined on southeast, while Guthrie pool, Logan County, was defined on the east.

Payne County: T. N. Berry & Co. et al's Fee 1, NW NE SW 13-18n-3e, between North Ripley and Mehan pools on northeast-southwest trend, Wilcox 4098-4103½ ft, 3-minute drill-stem test, packer 4090 ft, 2,000,000 ft gas, good spray oil; pulled tester, 90 ft oil, 42- to 43-gr, bottom-hole pressure 1570 lbs; 7-in casing to be set for production test.

Caddo County: Amerada Petroleum Corp. located Sprague 1, C SE NW 11-8n-12w, 7 miles north Ft. Cobb, 17 miles north Apache pool, large block worked by geology and geophysical instruments.

Texas Co.'s Smith 2, C SE NW 2-5n-12w, Apache discovery, to side-track 7-in casing collapsed 2200 ft, strong gas pressure, first whipstock set 2100 ft, 250 bbls per hour drill-stem Wilcox 3383-3410 ft. Smith 3, SW SE NE 2-5n-12w, 800 ft 13-in surface casing; Smith 4, NE NW NW 2-5n-12w, derrick; Maynahona 1, SWc NE 2-5n-12w, moving in. Sinclair-Prairie Oil Co.'s Lewis 1, NEc SW 2-5n-12w, blew out 350 ft, cemented 759 ft surface pipe, bottomed 770 ft.

Cleveland County: Sinclair-Prairie Oil Co.'s Craig 1, NEc SE 30-8n-1w, 2½ miles northeast Bale pool, Belle City lime 4978-5010 ft, Checkerboard 5485 ft, base Pennsylvanian and top Woodford 6840 ft, Hunton 6975 ft, Simpson dolomite 7323 ft, fair saturation, good stains 7420-40 ft, deepening below 7550 ft. Luther E. Mayes et al's McCommins 1, NW NE NE 15-10n-1e, south of Newalla, drill-stem test 5710-28 ft Hunton lime, 180 ft oil-cut mud, oil show dolomite 6127-35 ft, rotating 6200 ft.

Tecumseh Lake: H. G. Marshall's Montgomery 1, SWc SE 36-10n-3e, southeast edge pool, abandoned 5310 ft in dolomite, salt water. E. L. Lippert's Rosebush 1, NE SE SW 34-10n-3e, 2 miles west of production, plugged 5393-5410 ft Wilcox. M. T. Meyers, H. L. Keegan et al's Johnson 1, NE SE NE 34-10n-3e, drilling 5150 ft, no shows.

Guthrie Pool: T. N. Berry et al's land 1, SWc NW 8-17n-1w, east outpost semi-wildcat, perforated 5444-56 ft, salt water, ripped casing 5000-20 ft, salt water, bottomed 5459 ft Second Wilcox, to retest. Six new tests started.

Kansas

New Pools for Reno And Barton Counties

Reno County Viola - lime wildcat flowed at rate 3000 bbls; Arbuckle lime opened Ray pool, Phillips County, and Barton County wildcat opens small pool.

Reno County: Simpson Oil Co.'s and Republic Natural Gas Co.'s Snowbarger 1, SW SE NE 21-23-10w, 5 miles northeast Zenith pool, drilled plugs Viola lime 3773-87 ft, 2000 ft oil 20 minutes, flowed 125 bbls clean oil 1 hour 20 minutes, shut in for tankage. Cities Service Oil Co., largest lease holder, will offset to south. On southeast flank of Central Kansas uplift, importance of strike is emphasized by stratigraphic condition and relation to likely similar traps on east and southeast trend of uplift. Topped Anhydrite 446 ft, Ft. Riley 1715 ft, Florence 1798 ft, Topeka 2840 ft, Lansing 3310 ft, Mississippi 3620 ft, base Pennsylvanian 3595 ft, Misener 3772 ft, and Viola 3773 ft (—1992 ft subsea), correlating with Viola in Zenith pool, Stafford and Reno counties. Derby Oil Company, Deep Rock Oil Corp. and A. M. Landon have scattered acreage within play. Cities Service Oil Company drilled dry hole ¾-mile southeast to 4005 ft in C NW 27-23-10w, two dry holes directly east and one failure one mile northwest.

Ray Pool: Cities Service Oil Co.'s Vehige 1, SW SE SW 28-5-20w, Arbuckle 3575 ft, Reagan 3607 ft, bottomed 3654 ft, 12 shots 3568-79 ft, 2000 ft oil 18 hours, acidized, potential 2570 bbls daily; Reagan sand regular pool pay, showed water.

Barton County: L. Isern, W. L. Hartman and Pem Drilling Co.'s Laudick 1, C S½ SE NW 28-16-12w, between Beaver and Ainsworth pools, 800 ft oil, Arbuckle 3368-78 ft, 3 bbls hour, 7 hours, to acidize and complete; topped Anhydrite 800 ft, Ft. Riley 1770 ft, Florence 1870 ft, Topeka 2780 ft, Lansing 3116 ft. Two miles west Davidson pool, Armer & Black-Marshall Oil Co. plugged Redetzke 1, C S½ SW NW 5-16-11w, Arbuckle 3285 ft, hole full water 3337 ft.

Kearny County: Stanolind Oil & Gas Co.'s Patterson 1, C E½ SE SE 23-22-38w, deepening with rotary to Arbuckle, drilling 5200 ft Mississippi lime, previously showed 1855 ft 34-gr oil 20-minute drill-stem test 4740-60 ft Cherokee series.

Stafford County: Hamilton & Hawkins' Ward 1, NEc SW 15-23-13w, 6 miles north St. John pool, checked 70 ft structurally higher on Lansing lime than dry hole to east; supported by Stanolind and Central Petroleum Co. Stanolind's Black 1, C E½ NE SW 25-24-12w, 4 miles west of south end Zenith pool, Lansing 3503 ft, drilling below 3875 ft, checking structurally higher than dry hoel to north, no shows in Lansing-Kansas City lime zone. W. W. Drilling Co.'s Wilson 1-A, C N½ NW NW 5-25-14w, 2½ miles northwest Jordan pool, Anhydrite 930 ft, 7-in 3948 ft Viola lime, to drill plugs and test.

Nebraska

Harlan County Wildcat Going to Granite

Harlan County wildcat dry in Arbuckle, deepening to Granite; Valley wildcat hits granite 3505 ft. Nebraska daily production passes 5000-bbl mark.

Harlan County: Veeder Supply & Development Co. et al's Battin 1, C N½ SE NW 15-2n-18w, north Kansas State line, base Ft. Hays 790 ft, Dakota 1140 ft, Lansing 3385 ft, Conglomerate 3370 ft, Arbuckle 4045 ft, no shows, drilling 4300 ft, Granite objective. On 16,000-acre block, test supported by 3 major companies, 2 independents. Will move rig to operators Alter 1, C W½ SW NW 15-1n-18w, where 42 ft 10-in surface pipe is set.

Falls City Pool: Ohio Oil's Bucholtz 5, NW SE SW 17-1n-16e, 75 bbls hour, 4 hours, lower Hunton, bottomed 2313 ft. Bahr 5, C NW SE 7-1n-16e, Hunton 2295 ft, cored 2344 ft, testing show oil. Bucholtz 2, 17-1n-16e, to plug back test Hunton. E. C. Winter's Boice 2, NWc NE 18-1n-16e, drilling 2200 ft. J. & M. Oil Co's Towle 1, Sec 20-1n-16e, drilling 2000 ft.

Shubert Pool: Black Gold Operating Co's Bankers Life 1, C SE SW 30-3n-16e, perforated 12 holes 2546 ft, 24 holes 2530 ft Hunton, flowed 15 bbls oil hr, cutting water, installing pump. Same operators completed Schaible 1, C SE NE 31-3n-16e, Hunton 2515 ft, bottomed 2521 ft, 1500 gals acid, pumped 47 bbls 24 hours.

New Mexico

Lea County Wildcat Plugging Back for Test

Lea County wildcat plugging back to test upper shows; prospect on west edge county missed projected zones. Eddy County wells placed on same allowable schedule as Lea County, cutting top allowable 9 bbls for former.

Wildcats: J. W. Brown et al's State 1, lot 11, Sec 4-16s-35e, plugging back from dry lime 5507 ft to 5315 ft to install tubing packer, to acidize nominal saturation passed up below 5145 ft; topped San Andres lime 4540 ft, elevation 4043 ft. Fullerton Oil Co's State 1, C NE SE 18-16s-33e, drilling 4700 ft, missed Maljamar and Vacuum pays. Leonard & Welch's State 1, recent oil strike 3½ miles east Halfway pool, pumped 250 bbls 26-gr oil initial, sandy lime 3098-3102 ft.

West Texas

Jordan Has Big Well; More Abell Simpson Wells

Big natural producer east edge Jordan field; Ordovician failed produce within Todd deep pool; Simpson sands account for more big wells in Abell field, and follow-up development set for new Permian Pecos County oil area. Two wildcat failures listed, but prospecting on upgrade.

Crane County: Gulf Oil Corp's University 8-N, SWc SE SE PSL Section 9, east edge Jordan field, flowed 761 bbls oil first hour 3600 ft; official gauge deferred to install additional tankage.

Crockett County: Amerada Petroleum Corp et al's Todd 1-A, 4000 ft north production in Todd deep area, encountered sulphur water at 6400 ft in Ellenberger topped 6144 ft, elevation 2520 ft. Plugged back to perforate 5565-5722 ft to complete in regular Crinoidal lime. Todd 1-A highest on structure, and first within producing area to test Ellenberger, considered excellent producing prospect.

Yoakum County: Sam Dunn and H. L. Cain's More 1, mile west Ownby sector of Waples-Platter pool, encountered small show oil with salt water 5342-48 ft, sulphur water showing in deepening to 5467 ft. J. W. Murchison et al's Sawyer 1, deep test north flank Wasson field, drilling lime 6490 ft; no shows reported below regular pay.

Wildcats: Andrews County accounted for 2 failures, including Magnolia's Ralph 1, carried through Clear Fork to 6434 ft. Texas Pacific Coal & Oil Co-Seaboard Oil Co's Midland Farms 1-C, second test geophysical prospect southeast corner county, nominal oil saturation with water in drilling 4955 ft. Amerada's University 1-RA, southeastern Reagan County Ordovician prospect, drilling 8710 ft, and Plymouth Oil Co's Alford 1, near Upton-Reagan County line, same objective, drilling 5420 ft. In Terry County, Osage Drilling Co.-Anderson-Prichard Oil Corp's Christman 1 drilling lime 4470 ft. Magnolia's State-Walton 20, between Keystone and Kermit fields, Winkler County, drilling 7130 ft, will continue to Ordovician.

Pecos County Wildcat: Gulf and L. H. Wentz starting operations on Millar 1, SWc H&GN Section 39, Block 11, 6 miles south Girvin, seeking Ordovician production on geophysical prospect.

Permian Discovery: Stanolind's Conry-Davis 1, northern Pecos County wildcat 4 miles southeast Abell pool discovery, flowed 346 bbls 35.8-gr oil initial ½-inch choke after 1000 gals acid, perforations 3710-3810 ft; production from Tubb zone; drilled through Ellenberger 4825-5740 ft into granite, Simpson series absent. Company's Meyer-Logan 1, ¼-mile north offset, 121 bbls oil 24 hours varied tubing chokes after 4000 gals acid broken saturation 3747-3825 ft; later flowed 59 bbls 11 hours ⅛-in choke. Starting operations Conry-Davis 2, east offset discovery; additional development scheduled to justify pipe line entry.

Abell: Three prolific completions in upper Simpson gives area 16 oil wells. Stanolind's Waber 1, Lot 11, H&GN Section 23, broadened field northwest with potential 1526 bbls 43-gr, ½-in tubing choke, McKee sand 5281-5317 ft. Company's Crockett 2, southeast offset discovery, 1596 bbls 45.5-gr, ½-in, McKee sand 5080-5157 ft. Magnolia's Markey 2, same area, 2 feet pay, total depth 5400 ft, 1393 bbls initial ½-choke, and Crockett 3 acidizing through perforations 5711-34 ft, plugged back from barren Ellenberger 5716-5991 ft. McKee 1, east outpost, plugging back with lead wool from 5940 ft account water after showing small pumper from Lower Simpson, 5½-in 5914 ft. Shallow test to be drilled this lease to dispose of sulphur water in the Rustler lime.

North Texas

Strawn Sand Promises Jack County Oil Area

Jack County wildcat showed oil in Strawn; Montague County again active with group wildcat and outpost tests heading for deep zones; development Fargo pool outstripping completions and Ellenberger capable flush production in South Electra shallow district.

Jack County: F. Kirk Johnson et al's E. J. Shawver 1, SE NW SE J. Turner Survey A-609, 7 miles southeast Jackboro, 2400 ft fluid, 20 percent salt water, Strawn 2980-83 ft, oil tested 37-gr, drilling 3010 ft to fulfill 5500-ft contract.

Montague County: Sinclair Prairie's McCall 1, west offset its Clingingsmith 6100-ft discovery, drilling 2750 ft; and Lemon 1, south of producer, rigged. Superior Oil Co.'s Seay 1-A, east extension sector Ringgold pool, drilling 3390 ft. Benson Bros.' Lowery 1, north outpost same area, drilling 1100 ft. Shell's Thomas 1, wildcat 4½ miles southeast Spanish Fort, drilling 2350 ft. Walter Gant and Continental's Joe Turner 1, second wildcat for the Jennie Brown prospect, 5 miles northeast Bowie, drilling 3830 ft.

Fargo: Amerada's Dodson 3 expanded north portion field to west with natural flow 116 bbls oil 3 hours ½-in choke, Basal Canyon 4032-58 ft, bottomed 4065 ft. Humble's Anderson 2-B, northeast edge field, flowed 121 bbls oil 14 hours ½-in choke, 2000 gallons acid Strawn 4448-4606 ft. Texas Co.'s Anderson 1 testing Strawn 4479-4550 ft with collapsible blank liner 4006-26 ft, opposite promising saturation. Edward J. Kubat et al, new entrant, starting on C. E. Sears 40-acre unit south portion field. F. H. E. Oil Co. et al's Allison 1, SWc of northwest 90-acre H&TC Section 54, Block 12, 4 miles northeast Vernon, scheduled 6500-ft wildcat.

South Electra Deep: Magnolia's Burnett-Gladiolus 79, SE SW HT&B Section 6, responded second treatment 4000 gallons acid in Ellenberger 3627-35 ft for flow 57½ bbls oil first hour, then 145 bbls 3 hours, giving multiple-pay shallow district first Ordovician production; well originally completed 1924 as pumper at 1936 ft, and recompleted with 5½-in 3625 ft. Large-scale deepening operations in store for area.

Wichita County Deep: Hanlon & Buchanan, Inc.'s Denny 1, Wm. Graves Survey, northeast outpost KMA deep field, entered Ellenberger 4688 ft, sulphur water after drilling 4752 ft; hole to be plugged back to try for completion Strawn saturation 4066-4100 ft. Development Ellenberger zone in west portion KMA field involves greatest volume drilling any single area in district; crude yield per acre attractive, and dolomite pay remarkably consistent within proved area.

Young County: Shell's Bloodworth 1-A, north offset to Larimore pool Mississippian discovery, pumped 90 bbls oil and 30 bbls water initial, perforations 4870-4913 ft, plugged back from Ellenberger 5038-5100 ft. King Oil Co.- Phillips Petroleum Co.'s Daniels 9, ½-mile west by north of discovery, flowed small heads oil natural broken Mississippian 4842-96 ft, awaiting acid. F. H. E. Oil Co. et al's Graham 1, 8 miles

southwest New Castle, small volume free oil with water after flushing perforations 4657-70 ft with acid in Mississippian, topped 4626 ft, plugged back from water in Ellenberger 4796-4927 ft. L. T. Burns et al's Ragland 1, NEc W½ TE&L Section 257, wildcat, broken oil saturation in Bend 3970-4052 ft, drilling shale 4130 ft, and starting operations Jeffery 1, SWc NE TE&L Section 47, projected 5500-ft test ½-mile southeast 4940-ft failure.

East Texas

Lower Trinity Promises Distillate in Henderson County

Southwestern Henderson County wildcat promised gas-distillate production in lower Trinity; independents making third try for Woodbine production within major's Larissa geophysical prospect; prolific distillate well southwest edge Chapel Hill field; offset New Salem discovery coring for sand.

Trinity Wildcat: British - American Oil Producing Co.'s Young 1, southwest corner 490-acre tract, Joseph Rice Survey, 7½ miles southwest Athens, awaiting drill-stem test, samples 7731-39 ft registered favorable porosity with strong evidence gas and distillate; Massive Anhydrite 7489-7510 ft, elevation 393 ft. Promising production zone in Rodessa member Lower Glen Rose, and within subsea depths where production is found at Cayuga, nearest deep field.

Cherokee County: Bobby Manziel et al starting operations on Limberlog Negro School 1-acre site, John Vaughn Survey, making third test by group within Humble's Larissa wildcat block. No shows recorded by two recent failures.

Smith County: Sun Oil Co.'s Shofner 1, southwest edge Chapel Hill, responded to treatment with 4000 gals acid through perforations 8148-79 ft in Pettit, topped 8150 ft, elevation 490 ft, with flow 250 bbls 57-gr distillate, 5/16-in choke. Area has 4 gas-distillate and 9 oil wells in Pettit, and 4 gas-distillate producers in upper pays. Chapel Hill Gathering System's Johnson 1, near Rodessa pay discovery, testing through perforations 8100-36 ft in Pettit, topped 8058 ft, elevation 494 ft; application made for dual completion.

Rusk County: M. D. Bryant et al's Evans 1, south offset New Salem pool Woodbine discovery, coring for sand below 3950 ft, registering favorable structural position in logging Pecan Chalk 3103-3479 ft, top Austin 3869 ft.

Kilgore: Salt water withdrawals from East Texas field exceed the daily crude production, according to April survey made by Texas Railroad Commission's engineers and released last week. Salt water production estimated at 387,653 bbls daily, compared to 205,492 bbls daily in field check November, 1940. Gain in water recovery within 6-month period surpasses annual increase previously reported by wide margin, and is factor in loss of 13 pounds reservoir pressure during May and June.

The survey listed 4899 wells that make salt water, ranging up to 99 percent of total fluid, representing one-fifth of 25,990 wells on production April 1. Total of 757 submarginal wells account for 176,652 bbls of daily water output, or an average of 233 bbls daily. Latter are not subject to proration, and produce each day, while other wells observe production holidays.

Injection of salt water into Woodbine as means of water disposal and to lessen the bottom-hole pressure, declined during June to 1,769,313 bbls, or an average of 58,977 bbls daily, with 36 wells in service. The same group of wells returned 1,888,606 bbls, or an average of 60,923 bbls daily, during March.

The April survey credited the field with 6828 pumping wells, or a net gain of 500 for the 6-month period, while air-gas lift producers increased from 849 to 887 wells. Approximately 270 depleted pumping wells have been plugged since the first of the year.

Southwest Texas

East Premont Given Two Extensions; Balcones Active

Two extensions to East Premont field, Jim Wells County, new areas along the Balcones, a key strike in the Benavides sector, and testing of two Wilcox operations brought South Texas development to a high level. Drilling shows an increase, activity being 35 percent higher than at the year's start.

Mirando District: A new oil field southeast of Benavides in Duval, Hiawatha Oil & Gas Co.'s George Parr 32, saturated oil sand 4917-40 ft, drill stem test flowed clean oil, 165 lbs working

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pressure, ¼-in top and bottom chokes, 15 minutes to show new field southeast of Benavides, Duval County. Bottom-hole tests showed 2000 lbs closed in, 750 lbs flowing pressures; drilled to about 5200 ft, plugged back. Location over 1½ miles east North Sweden field, and east of several failures in zone.

W. C. McBride, Inc.'s Garza 1, Sec. 675, 8 miles north Bruni, Webb County, cored Glen sand 2336-53 ft, perforations 2336-44 ft, bailed 5 to 6 gallons oil per hour; allowed stand over night, salt water rose 125 ft; being swabbed.

Wilcox Trend: Shell Oil Co.'s D. G. McManus 1, Delmas Survey, Brushy Creek prospect, Lavaca County, 7-in casing about 9080 ft, drilled about 9500 ft, plugged back; perforated around 8950 ft, testing Wilcox zone; closed operation.

Edwin M. Jones' George West 3-B, at George West, Live Oak County, squeeze jobs, preparing perforate Wilcox 9524-9614 ft; would open field.

Balcones Fault Zone: W. J. Furlong and C. L. Thompson's O. B. Lentz 1, Bastrop County, 70 bbls 38-gr oil hour, open tubing, 350 lbs casing pressure, acidized Dale lime 2226-44 ft; drilled 2453 ft in dry serpentine, plugged back; apparently opens field 3000 ft southwest Carrol area, several dry holes being between test and producing area.

Wiegand Brothers' Carrol 2, mile farther southwest, cut fault, showed oil in Austin chalk at 2500 ft, testing; would be another field as type structure and formation different from Lentz strike.

Rio Grande Valley—Sun Oil Co.'s C. M. Hall 1, Sec. 91, Starr County, 1,042,000 ft gas day 5/32-in choke; 1600 lbs tubing, 1800 lbs casing pressures, perforations 4665-70 ft; either merges Sun and North Rincon pools, or opens field.

W. R. Davis, Inc.'s Arizona & Texas Citrus Co. 1, 7300 ft southeast McAllen field, Hidalgo County, drilled 8700 ft; ran casing for gas-distillate completion.

Lower Gulf Coast: Sun Oil Co.'s Canales 1, mile west south end East Premont field, Jim Wells County, sand 5198-5210 ft, perforated 5202-07 ft, flowed 145 bbls 44-gr oil day 3/16-in choke; pressures 200 lbs tubing, 900 lbs casing; no water, low gas/oil ratio. Transwestern Oil Co.'s Dunlap 2, 3/5-mile east south end same field, new sand, perforated 6090-94 ft, flowed 154 bbls 39.9-gr oil, 7/64-in choke, pressures equalized 1200 lbs; no water, gas/oil ratio 971/1.

Corpus Christi Corp.'s Wardner 20, 4383 ft south Stratton field, Kleberg County, gas and distillate 3 regular field sands 4789-4924, 6337-49 and around 6650 ft; due to deepen, then set casing for completion; promises first field producer in Kleberg County.

Gulf Oil Corp.'s Noble 1-B, east side North McFaddin field, Victoria County, completed new sand to provide crude in extension area; 105.11 bbls day 39-gr ⅛-in choke, 400 lbs tubing, 650 lbs casing pressures; little water, 625/1 gas/oil ratio; sand 5859-64 ft.

Magnolia's Vordick 1, squeezed perforations 5242-46 ft after developing salt water; swabbed several bbls oil hour, fluid level rising to 500 ft; to have been pumped when water developed; new holes to be made for completion, promises to extend LaWard field 1½ miles east in Jackson County.

Texas Gulf Coast

Deepening Operations in Proven Areas Hold Interest

Texas Gulf Coast interest centered on deep tests in several fields, several on Wilcox trend.

Deep Drilling: Republic & Houston's Hurd 52, Joe's Lake field, Tyler County, drilled to 10,625 ft, 3000 ft below upper Wilcox pay, running casing to test several deep zones. Gulf Oil Corp's Wing 48, Segno field, Polk County, drilling 10,850 ft, 2750 ft below Wilcox production, sands reported above 10,300 ft where casing set. Stanolind Oil & Gas Co's Hulen 4, Alta Loma field, Galveston County, to test sands 10,350-380 ft, field production 9160 ft. Stanolind's Brundrett 1, at Chenango, Brazoria County, drilling 10,500 ft toward lower Frio zones, field production 8650 ft.

Scattered Wildcats: Glenn McCarthy's Triangle 1, north Chocolate Bayou, Brazoria County, preparing run electrolog 10,000 ft. Operator's Marmion 1, Bailey's Prairie, Brazoria County, abandoned 11,470 ft. McDannald Oil's Penn 1, Harris County, drilling 3000 ft on 8500-ft test. Providence Oil Co's Settegast 1, west Clodine field, Fort Bend County, below field discovery but found only water, deepening to Cook Mountain. Stanolind's Doman 1, west outpost new Lucky field, Matagorda County, squeeze jobs 9406 and 9455 ft to isolate deeper sand, preparing production test.

Louisiana Coast

Napoleonville Dome Will Get Deep Flank Test

Five operators are interested in proposed 10,000-ft flank test for Napoleonville salt dome, Assumption Parish; Neale deep zone due for additional drilling.

Napoleonville Dome: George H. Echols and J. Ray McDermott will make 10,000-ft test east flank dome to further play on flanks of piercement type domes. Location to be in Sec. 14-12s-13e; Shell Oil Co., Tide Water Associated Oil Co. and Wm. Helis contributing.

Neale Field: Atlantic Refining Co. preparing several locations for deep zone recently established by operator's Musser-Davis Lumber Co. 5, which on confirmation test made 20 bbls oil hour, 6-hour test, 10,880-896 ft; flowed 142 bbls oil 12 hours, 3/16-in choke. Production from zone 2525 ft in Wilcox formation. Deepening of tests producing, or abandoned in upper Wilcox unlikely now as 5½-in casing was used.

Pine Prairie Field: Gulf Refining Co.'s Evangeline Land & Minerals Co. 2-A, discovery north offset, oil sand 100 ft below discovery, 46 ft sand, 5½-in at bottom 8354 ft. E. J. Nicklos' Jesse Reed 1, building derrick.

Scattered Wildcats: Phillips Petroleum Co.'s Plaquemines Parish wildcat, Bastian Bay prospect, conditioning hole for casing, bottomed 10,710 ft. Pan American Production Co.'s Moss Lake prospect test, Calcasieu Parish, drilling shale 9626 ft, projected 10,000 ft.

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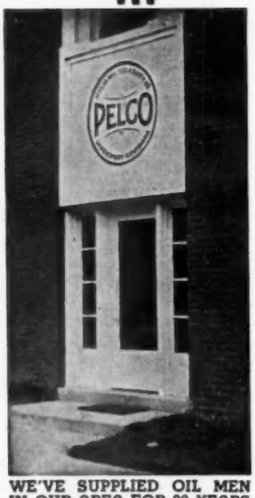

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North Louisiana

Caldwell Parish Wildcat Indicates Wilcox Gas Area

Wilcox promised Caldwell Parish gas area and casing was set for second test in new LaSalle Parish Wilcox oil field.

Caldwell Parish: Big West Drilling Co's Lowe 1, SE SE 36-12n-3e, showed Wilcox gas on electrolog and side-wall samples, bottomed 4009 ft.

LaSalle Parish: Carter Oil Co. and Phillips Petroleum Co. cemented 7-in 4809 ft in Delta Hardwood Lumber Co 2, NE SE SE 12-6n-4e, second test new Catahoula Lake Wilcox oil field, bottomed 5257 ft, plugged back.

Vernon Parish: C. A. Kelsey had derrick 4500-ft wildcat, Nona Mills 1, SW NE SE 31-3n-11w, 10,000-ac block, 4500-ft test.

Michigan

Reed City Operations Up To 31; Fifth Well Finaled

Fifth good well completed in Reed City field as operations jump to 31; Bay County Dundee lime field extended mile north.

Reed City: Gulf's Henry 1, NE NE NW 31-18n-10w, South offset to producer, 209 bbls first 45-minute open test, rated 4000-bbl potential for fifth producer in pool; 31 drilling rigs and locations, mostly confined to 1¼-mile proven north-south span.

General Drilling Company moved portable slim-hole rotary in from Illinois, started 5-well shallow 1200-1500-ft core program in Township 19-n-12w, Lake County, with at least one well scheduled for Monroe lime.

Bay County: Chapman's Duso 1, SE NE NE 34-15n-4e, mile north proven Dundee lime production, topped objective 2770 ft, carrying 2000-ft oil at 2850 ft.

Gulf's Bateson 1, Sec 2-14n-4e, state's deepest, drilling 8900 ft in Richmond lime shale series of Ordovician; expect Trenton between 9200-9300 ft; Niagaran did not show.

Roscommon: Three locations made following Gene Hilliard's State 1, Sec 34-21n-3w, Traverse lime wildcat discovery. Semi-choked by mastergate, discovery producing 2400 to 4300 bbls day, 3438 ft.

California

Tejon Ranch Wildcat to Abandon at 4966 Feet

Kern County wildcat encountered rock to abandon; two operators reported planning joint Madera County test.

Kern County: Richfield Oil Corp.'s Tejon Ranch 2, Sec. 19-11-19, Tejon Ranch-Grapevine area, entered basement rock 4945 ft, cored to bottom 4966 ft, to abandon. Company's fourth wildcat failure in area; several drilled by Ohio Oil Co., 5 by Reserve Oil & Gas Co. and 1 by Continental Oil Co.

Madera County: Shell Oil Co. and Pure Oil Co. reported planning joint gas test Sec. 9-11-14, 2½ miles southeast Chowchilla area.

Alameda and Ventura: Shell grading location Nissen 1, Sec. 7-2-3, Alameda County, 6 miles west Tracy gas field; company optioned 18,000 acres Saticoy-Santa Paula district, Ventura County, from Santa Paula-Saticoy Oil Co., extending Santa Paula southwest to east limits Ventura, 14 miles.

Rocky Mountain Area

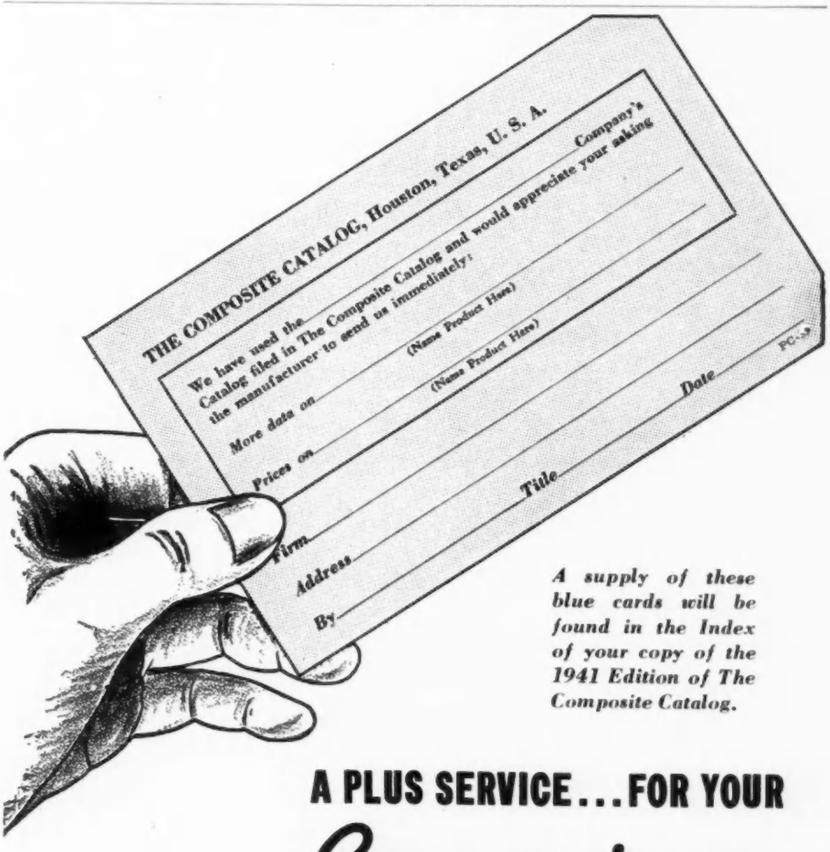
Tensleep Promises New Wyoming Oil Field

A test of the Middle Fault block, Frannie Dome, Wyoming, promised a discovery; Cole Creek, Wyoming, extended ¼-mile west, while Dakota High wildcat 5 miles south Lance Creek blew wild from Basal Sundance.

Middle Fault: Stanolind's Rosenberg 21-X, CNE SW NW 25-58n-98w, Middle Fault Block, Frannie, Park County, Wyoming, indicated 200 bbls daily, swabbing through 90 perforations opposite Tensleep 2634-46 ft, 7-in 3030 ft, bottomed 3034 ft, installing pump.

Cole Creek: General Petroleum Corp's State 3-16-S, NW SW NW 16-35n-77w, extended Cole Creek, Natrona County, Wyoming, ¼-mile north, bottomed 4679 ft, top Shannon saturation 4650 ft, pumped 200 bbls daily. Company drilling 1149 ft Government 37-21-G, CNW SE SW 21-35n-77w, ¼-mile south and west extension try Cole Creek.

Dakota High: Western Petroleum Corp's Mosier 1, SW SW 31-35n-64w, Niobrara County, Wyoming, blew 1.5 million ft sulphur gas, bottomed 736 ft Basal Sundance, attempting shutoff to deepen.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THE COMPOSITE CATALOG
OF OIL FIELD AND PIPE LINE EQUIPMENT

UNITED STATES WELL COMPLETIONS

Arkansas

Company, Well and Location	Init. Prod. Bbls.	Depth
Clark County (Wildcat)—		
W. S. King, McKenzie 1, 30-10-19	*	1336
Nevada County (Troy)—		
Benedum & Trees, Fincher 8, 10-14-20	55	2151
Union County (Urbana)—		
Marine Oil Co., Thompson B-9, 3-18-13	50	3570

California

Company, Well and Location	Init. Prod. Bbls.	Depth
Kern County (Coles Levee)—		
Richfield, KCL A-65-29	984	9275
Kern County (Elk Hills)—		
Standard, No. 42-33S	350	3205
Kern County (Mount Poso)—		
Shell, Vedder-Rall 17	369	2022
Security 29	148	1860
Kern County (Round Mountain)—		
Crestmont Oil Co., Olcese Estate 1-2	116	1691
Kern County (Ten Sections)—		
Shell, KCL A-46-29	2146	8235
Los Angeles County (Castaic)—		
Jasper Pet. Co., Videgain 1 (pb 5994)	450	6055
Western Gulf Oil Co., Lechler 2 (pb 6940)	116	7178
Los Angeles County (Dominguez)—		
Northwest Dominguez Oil Co., Grant 2	695	7236
Shell, Reyes 118	306	4145
Union, Austin 12	504	7217
Los Angeles County (Long Beach)—		
Apex Pet. Co., Kirkpatrick 27	65	3565
Los Angeles County (Newhall)—		
Texas, Whitnah 1	*	4999
Los Angeles County (Wilmington)—		
Selegna Pet. Co., No. 8	175	3600
Union Pacific, UP 18	729	3969
UP 189	199	2783
Orange County (Whittier-La Habra)—		
Fullerton Oil Co., LaHabra 8 (pb 2830)	60	3610
Sacramento County (Rio Vista)—		
Amerada, Upham 1	No Test	4305
Santa Barbara County (Santa Maria Valley)—		
Union, Moretti 1-4	693	2461
Nicolai 3	696	5440
Ventura County (Ventura Avenue)—		
Shell, Taylor 137	1299	7628

*Failures; †Junked; ¶Million cu. ft. gas.

OLD WELLS DEEPENED

Company, Well and Location	Init. Prod. Bbls.	Depth
Los Angeles County (Seal Beach)—		
Tide Water, Bryant 21 (otd 4873)	87	5687
Kern County (Fruitvale)—		
Western Gulf, KCL B-32 (otd 3034)	143	3203

Illinois

Company, Well and Location	Init. Prod. Bbls.	Depth
Bond County—		
C. H. Harrison, Bowman 1, sw sw nw 19-4n-4w	*	890
Ripley Dome Synd., Jeffries 2, n½ sw ne sw 21-4n-4w	*	491
Oil Producers Synd., Dixon 1, se nw sw 8-5n-4w	*	675
Clark County—		
Ray Brown, Kirkham 1, nw sw se 14-12n-14w	*	360
Zink et al, Tyler 1, se se ne 23-12n-14w	*	291
Clay County—		
Robinson, Tolliver 3, sw sw ne 26-4n-7e	270	2339
Kilpatrick, Irwin 1, nw sw nw 5-5n-5e	*	2560
Clinton County—		
Ashoff, Twenhafel 1, ne ne ne 17-1n-2w	4	1109
Fayette County—		
Bremo Dev. Co., Mahan 1, se sw nw 3-5n-3e	*	2010
Carter, Durbin 8, sw nw nw 3-7n-3e	*	1630
Wills-Gordon 1, nw sw nw 36-9n-3e	120	1543
Dunnaway 6-D, c w½ ne ne 29-8n-3e	206	3019
Wisenant & Trenchard, Lilly 26-D, c e½ sw se 16-8n-3e	317	3131
Franklin County—		
Menhall, Stalkup 4, ne se se 23-6s-2e	300	2095
Wegener et al, Gentry 4, nw nw sw 24-6s-2e	296	2087
Adkins, Rice 6, se ne se nw 25-6s-2e	253	2133
CW&F Coal 1, n½ nw ne se 36-6s-2e	232	2119
CW&F Coal 1, nw nw se 36-6s-2e	312	2135
Shell, Doty et al 9, sw nw sw ne 25-6s-2e	198	2142
Howell, Meimier 2, sw se ne 36-6s-2e	203	2130
Meimier 4, se se ne 36-6s-2e	186	2128
Meimier 5, ne ne se ne 36-6s-2e	120	2134
Geo. White, Meimier 1, nw sw sw 30-6s-3e	166	2131
Gallatin County—		
Fisher Oil et al, Ellis 4, sw sw se 11-7s-8e	600	2181
Lewis Prod., Mitchell 3, nw ne sw 11-7s-8e	375	2163
Sinclair Wyoming, Mitchell 2, sw nw se 11-7s-8e	75	3040
Price & McKinley, Patton 1-A, nw ne ne ne 4-8s-8e	*	600
Buell & Herndon, Egypt T&T 1-A, sw nw sw 15-8s-10e	201	2090
Carter, Curry 1, sw se nw 15-8s-10e	*	2869
Leach & Halbert, Curry 4, nw nw nw 15-8s-10e	161	2091
Phillips, Egypt T&T 7, nw se ne 16-8s-10e	73	785
Hamilton County—		
DeKalb, Schribner 4, ne sw ne 27-3s-5e	72	3299
Gulf, Zellers 1, se nw se 27-3s-5e	321	3310
Sinclair Wyoming, Hall 11, ne se se 27-3s-5e	148	3322
Ohio, Matheny 10, ne se se 3-6s-6e	85	3074
Shell, Carey 2, ne sw nw 3-6s-6e	19	3086
Texas Co., Jackson 1, ne nw sw 3-6s-6e	229	3072
Jack Chevigny, Phillips 1, sw nw sw 26-6s-6e (pb 3145)	53	3190
Jasper County—		
Pure, Roberts "A" 1, w½ ne ne 4-5n-10e	221	2860
Cuningham 1, c e½ ne se 19-5n-10e	717	2840
Poff 1, c w½ se ne 29-5n-10e	119	2880
Jefferson County—		
Weiser Oil, Hoyt Hrs. 1, ne ne nw 3-1s-1e	*	2180
Marion County—		
Absher & Booth, Sisson 3, ne nw nw 3-2n-2e	44	2026
Schoenfeld, Atchison 1, sw sw se 27-4n-1e	85	1362
Shell, Clark "A" 3, sw ne se 34-4n-1e	93	1367
Montgomery County—		
Detrick, Banes 1, nw ne se 20-10n-2w	*	2528
Richland County—		
Pure, Street Cons. 1, c w½ ne ne 13-4n-9e	*	2928
Shelby County—		
National Pet., Bilyeu 1, se se nw 26-11n-2e	*	1843
Olson Dr., Atkinson 1, c e½ se se 12-13n-3e	*	2922
St. Clair County—		
Tom Cain, Church 1, nw sw se 28-1n-10w	8	540

[Continued on next page]

Summary of Drilling Operations in the United States, Week Ended July 19, 1941

	WELLS COMPLETED								*PERMITS FOR NEW WELLS				
	Total for Week	New Wells Drilled for Oil and Gas: Oil Wells	Gas Wells	Failures	†Miscellaneous	Initial Production	Total 1941	Total this Date 1940	This Week	Total this Month	Total 1941	Total this Date 1940	Year Total 1940
Alabama							1	3					
Arkansas	3	2		1		105	8	104	8	15	100	86	153
California	23	22		1		10,330	634	624	26	78	622	600	1,042
Colorado							9	4					
Florida								1					
Georgia	1			1			1						
Illinois	92	59		24	9	11,912	1,920	2,185	93	305	2,448	2,480	4,532
Indiana	8	2	1	4	1	280	287	233	16‡	37	82		
Iowa							2						
Kansas	49	30	3	14	2	31,248	1,189	1,058	27	129	1,248	1,125	2,048
Kentucky	7	4		1	2	505	159	175	10‡	22	43		
Louisiana	38	26	1	11		4,471	769	937	47	121	957	936	1,658
Michigan	16	9	1	6		4,625	439	714	16	55	456	644	1,093
Mississippi	7	7				3,616	96	114					
*Missouri	1			1			33	7		1	9		26
Montana							109	100					
*Nebraska	2	1		1		2,000	47	1	3	4	51		69
New Mexico	10	8		2		2,533	193	406	7	24	226	362	559
New York	28	21			7	159	471	592					
Ohio	33	8	14	8	3	325	899	477					
Oklahoma	39	20	5	9	5	11,013	1,132	1,224	41	168	1,184	1,033	1,888
Pennsylvania	58	44	6	1	7	48	2,062	2,156					
South Dakota								1					
Tennessee							7	8					
Texas	283	204	5	72	2	104,202	5,418	5,888	319	882	6,600	6,649	11,170
Utah								2					
West Virginia	9		7	2			356	298			.163	414	782
Wyoming	3	1			2	1,260	62	79				1	1
Total this week	710	468	43	159	40	188,632	16,383	17,391	613	1,841	14,189	14,330	25,021
Total last week	641	416	47	141	37	159,485	15,673	16,805	531	1,228	13,413	13,824	25,021
Total this year	16,383	10,006	1,200	3,631	1,546	4,634,910							

* This tabulation includes those states where weekly data are available; figures for Missouri date from August 10, 1940; Nebraska from August 3, 1940.
‡ No data available before June 14, 1941.
† Includes old wells deepened, water-intake, gas input, and salt water disposal wells.

United States Well Completions—*Continued*

Company, Well and Location	Init. Prod. Bbls.	Depth
Cherley Wise, Tarleton 5, ne ne ne 34-1n-10w	100	629
Wabash County—		
O'Meara Bros., Mullimax 1, se ne nw 9-1n-12w	*	2340
Hays & Young, Sparks 3-A, nw ne se 36-2n-12w	*	1972
Hossier Oil Co., McClain 1, c e½ sw ne 36-2n-12w	60	14341/2
L. E. Kennedy et al, Carson 1, s½ sw se ne 16-1s-12w (pb 2112)	30	2401
Shell, Hein 2, n½ nw ne se 18-1s-12w	112	2082
K. M. Menifer, Hudson 1, se se ne 20-1s-12w	480	2441
E. O. Olds, Coleman 1, se se se nw 20-1s-12w	65	2078
Washington County—		
Magnolia, Koelling 1, ne nw ne 15-1s-1w	45	1535
G. L. White, Koelling 1, nw nw nw ne 26-1s-1w	25	1569
Wayne County—		
Pure, Hanington 1, c e½ nw nw 12-1n-7e	408	3060
Garison 1, ne nw nw nw 31-2n-8e	49	3050
White County—		
Ryan Oil et al, Lamont 1, ne sw sw 33-3s-10e	*	3211
Roche-Boyles & Buchanan, Groff 1, c e¼ se sw 35-3s-10e	*	3203
Buell & Herndon, Cox 1, sw nw se 5-4s-14w	*	2892
Arrow, Dr., Lomas 1, sw nw sw 14-4s-14w	*	3035
Skelly, Daly Trs. "A" 5, w½ nw ne sw 17-4s-14w	44	2290
Karch 1, se ne nw 24-6s-10e	278	2873
Sinclair Wyoming, Donald 1, nw se sw 21-4s-14w	399	2864
Sun & Ellis, Jacobs "A" 9, c s½ sw ne 28-4s-14w	105	2596
Jacobs "B" 3, s e½ c e½ nw sw 28-4s-14w	60	2595
Superior, Collins 4, nw sw se 22-4s-14w	76	2865
Ford 4, sw nw se 22-4s-14w	100	2916
Ford 20 nw ne sw 28-4s-14w	60	2860
Ford 21, c w½ ne sw 28-4s-14w	240	2725
Kern 1, se se ne 32-4s-14w	65	2860
Fitton 12-A, nw ne nw 33-4s-14w	113	2730
Fitton "A" 14, ne nw nw 33-4s-14w	375	2910
Bruce Martin et al, Williamson 1, c s½ sw sw 19-5s-9e	*	3312
Spillars et al, Holderby 1, sw ne nw 35-5s-9e	*	3221
Joe Dawson, Rodenheig 1, ne se ne 11-6s-10e	*	3106
Magnolia, Sisson-Higgins 1, nw sw se 24-6s-10e	477	2261
Kingwood-Sinclair, Porter 1, ne sw sw 12-7s-8e (pb 2748)	153	3060
OLD WELLS DEEPENED		
Fayette County—		
Carter, Dove 1, s½ ne nw se 15-8n-3e (otd 1423)	408	1524
Main 1, c w½ ne se 15-8n-3e (otd 1567)	474	1591
Lawrence County—		
Chet Everts, Catt 1, sw se sw 23-2n-12w (otd 1397)	*	2200
Marion County—		
Magnolia, Young 90, sw sw sw 21-2n-2e (otd 3445)	40	4665
Young 17, sw nw ne 29-2n-2e (otd 3442)	32	4621
Texas, Shanafelt 14, nw ne ne 29-2n-2e (otd 3424)	72	4619
McCollum 26, ne nw ne 32-2n-2e (otd 3415)	45	4622
Shelby County—		
Rose & Durbin, Flenner 1, sw sw se 9-10n-4e (otd 1702)	*	2055
White County—		
Bell Bros., Skiles 6, se nw sw 16-4s-14w (otd 2848)	40	2940

Indiana

Company, Well and Location	Init. Prod. Bbls.	Depth
Elkhart County—		
Hostetler & Haynes, Wolverton 1, se sw ne 15-38n-4e	*	651
Hamilton County—		
E. P. Anderson, Gentry 1, c ne se 32-20n-6e	*	925
Jay County—		
Ellen Burke, Outcolt 2, sw nw sw 24-22n-14e	*	123
Posey County—		
Tide Water, Doll 10, ne nw se 33-3s-14w	200	2895
Paul Rossi et al, Dickhaut 1, se sw ne 19-6s-12w	80	2369
Sullivan County—		
Hossier Public Utility, Tichenor 225, c nw se 15-9n-9e	20.21	902
Vanderburgh County—		
Mitchell Travis et al, Keck 1, se sw nw se 6-7s-11w	*	1726
OLD WELL DEEPENED		
Parke County—		
H. N. Oakley, Montgomery 1, c n½ n½ nw 20-14n-8w (otd 1606)	*	2466

Kansas

Company, Well and Location	Init. Prod. Bbls.	Depth
Barton County—		
Lauck & Moncrief, Oeser 1, sec 25-16-12w (pb 2972)	311	3275
Darby, Bitter 5, c n½ ne ne 5-16-13w	1968	3360
Stanolind, Kultgen 2, sw ne 26-15-13w	1114	3419
Phil-Han, Kirmer 1, c n½ nw nw 8-17-11w	1767	3379
Olson Oil Co., Oltman 1, nec sw 15-17-13w	*	3455
Texas, Burmeister "A" 5, c e½ sw sw 2-17-11w	3000	3340
I.T.I.O., Roth 1, c n½ ne sw 24-19-11w	*	3368
Vickers, Kerr 2, c s½ se nw 24-19-11w	*	3397
Butler County—		
I. Molk, Loomis 14, sw nw sw 15-27-4e	20	2027
Cowley County—		
Tulsa Oil Corp., Kennedy 1, se sw nw 12-30-5e (pb 2861)	52	2872
Brewer, Miller 2, ne nw sw 16-32-5e (pb 2381)	8.0	3140
Leader-Zephyr, Knowling 1, nec sw 20-32-5e	*	3119
Ellis County—		
Dickey, Carmichael "C" 4, c s½ nw nw 17-11-17w	3000	3355
Cities Service, Collahan "A" 25, c e½ ne ne 24-11-17w	1641	3421
Ellsworth County—		
Murfin et al, Loula 2, c e½ ne se 28-16-10w	50	3299
Stanolind, Schroeder "B" 1, c w½ ne ne 28-16-10w	132	3332
C. E. Ash et al, Wilkens "D" 1, nwc 13-17-10w	1160	3272
Doniphan County—		
Plymate & Bornholdt, Elliott 1, c e½ se sw 31-3-20e	*	2950
Jefferson County—		
A. B. Pipeline, Ragan 1, c se ne 4-10-20e	6.0	1440
McLaughlin, McLaughlin 2, c w½ ne nw 4-10-20e	4.5	1448
Longwell & Young, McLeod 3, c ne se 5-10-20e	50	1644
C. A. Caufield & J. E. Sullivan, Ragan 1, swc se 19-10-20e	*	1710
Marion County—		
Ring-Mac, Kaiser 1, c w½ nw se 33-17-4e	359	2406
McPherson County—		
Westgate-Greenland, Rosander 1, c e½ sw sw 33-17-2w	*	3055
Prunty, Jones 2, ne nw sw 32-21-1w	180	3327
Norton County—		
Shaffer et al, Van Mayrhauser 1, c n¼ nw ne 26-5-22w	*	3722
Phillips County—		
Cities Service, Johnson "B" 2, ne nw sw 32-5-20w	3000	3636
Pratt County—		
Marylyn et al, Jackson 2, c e½ sw nw 1-27-13w	*	4290
Rice County—		
Sharon, Hennie 1, c w½ nw se 21-19-10w	466	3301
Rooks County—		
Broadview, Beardmore 5, c s½ nw sw 2-9-16w	494	3208
Helmerich & Payne, Baxter 1, c s½ se nw 2-9-16w	495	3220
Baxter 2, c n½ se nw 2-9-16w	166	3226
Baxter 3, c s½ sw nw 2-9-16w	312	3190
Rush County—		
Power Oil Co., Luft 1, nw nw ne se 8-18-16w	*	3521
Russell County—		
Cities Service, Beisel 1, nec nw 15-14-12w	*	3340
Weimeister "B"1, nw ne nw 36-14-13w	*	3127
J. J. Hall, Miller 7-D, c s½ ne ne 31-14-13w	835	3152
Skelly, Carter 2, c n½ ne nw 33-14-13w	136	2868
Texas, Goodhart 2, c w½ nw se 25-14-13w	15	3106
Keil 2-D, c e½ nw se 36-14-14w (pb 3012)	833	3146
Billings et al, Hall 4, sw ne se 21-14-14w	2016	3071
Phillips, Sidey 1, c n½ ne sw 34-15-11w	*	3304
Jones & Shelborne, Major 3, nw sw ne 4-15-12w	3000	3018
Coralena, Sellens 3-A, nec nw 17-15-13w	1385	2976
Shell, Sellens 8, ne se sw 33-15-13w	*	3369
Stafford County—		
Landon, Volker 3, c n½ sw sw 1-24-11w	291	3736
Skelly, Kipp "E" 2, ne nw sw nw 26-25-14w	3000	3891
OLD WELL DEEPENED		
Kingman County—		
Skelly, Miles "B" 4, swc se 19-27-10w (otd 3505)	33.9	4260
SALT WATER DISPOSAL WELL		
Harvey County—		
Sinclair-Prairie, Neufeldt "A" 2, c e½ e½ se 18-22-3w (otd 3471)	..	4362

Kentucky

Company, Well and Location	Init. Prod. Bbls.	Depth
Daviess County—		
J. C. Miller, Morgan 11, 12-n-29	20	1289
Petroleum, Burns 4, 15-n-29	175	1701
Henderson County—		
Stewart & Snyder, Cosby 7, 8-o-25	15	690
Connell et al, Bennett 3, 18-p-26	35	1511
Ohio County—		
Arnold Likens, Ferguson 1, 10-m-32	*	474
OLD WELLS DEEPENED		
Hancock County—		
Burt Thompson et al, Jackson 1, 22-n-33 (otd 621)	*	951
McLean County—		
Burt Cameron, Kerrick 3, 4-m-28 (otd 1377½)	260	1675

South Louisiana

Company, Well and Location	Init. Prod. Bbls.	Depth
Acadia Parish (Ritchie)—		
Republic Prod., Ruppert 2	*	3556
Cameron Parish (Black Bayou)—		
Shell, Watkins 45	193	7581
Cameron Parish (Cameron Meadow)—		
Humble-Magnolia, Cameron Meadow 32	50	6226
Cameron Parish (Chalkley)—		
Shell, Hanszen 10	295	10,065
Evangeline Parish (Ville Platte)—		
Continental, Tate A-1	294	10,200
Iberia Parish (Fausse Point)—		
Sun, Planters Lbr. Co. 9	*	6453
Iberia Parish (Little Bayou)—		
Wm. Helis, Bullock 10	600	6495
Iberville Parish (Bayou Blue)—		
Superior, Schwing L&S Co. 13	103	4791
Jefferson Parish (LaFitte)—		
Texas Co., Rigolettes B-1	129	8868

[*Continued on next page*]

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United States Well Completions—*Continued*

SOUTH LOUISIANA—Continued

Company, Well and Location	Init. Prod. Bbls.	Depth
La Fourche (Golden Meadow)—		
Bering Oil Co., LaFourche Realty Co. B-1	*	5500
Plaquemines Parish (Grand Bay)—		
Gulf, Grand Prairie Levee Dist A-16	226	8551
Texas Co., State-Demis Pass 1	520	10,101
St. Martin (Anse La Butte)—		
Stanolind, Bergeron 5	223	4903
Vermilion Parish (Gueydan)—		
Pure, Alliance Trust Co. 8	355	9903
West Baton Rough Parish (Bayou Choctaw)—		
Carter Oil, (Louark), Morley Cypress Co. 3	324	8556

North Louisiana

Company, Well and Location	Init. Prod. Bbls.	Depth
Bossier Parish (Bellevue)—		
G. D. Farmer, Rhoem 1, 10-19n-11w	*	425
Premier Invest. Co., Wyche 36, 14-19n-11w	5	380
Bossier Parish (Sligo)—		
Triangle Dr. Co., Skannal A-3, 13-17n-12w	75	3152
Treat 1, 14-17n-12w	110	3161
Bienville Parish (Bisteneau)—		
Union Prod. Co., Cook Unit A-1, 10-16n-10w	¶41.0	5310
Caddo Parish (Pine Island)—		
L. H. Freeman, Craig 1, 19-21n-15w	10	1667
Hawkins & Stewart, Barfield 2, 21-21n-15w	*	1610
Guy N. Kinney, Crystal 6, 24-21n-16w	*	1705
Stanolind, Dillon Hrs. 137, 12-21n-15w	100	1683
John Warren, Goodwin 1, 33-21n-15w	50	1590
Tiger O&G Co., Crystal A-2, 24-21n-16w	*	1707
Caddo Parish (Greenwood)—		
Delta Dr. Co., Agurs-Wynn 1, 23-17n-16w	*	2603
Crane Parish (Urania)—		
J. E. Grandstaff, Morrison 3, 10-9n-1e	75	1532
La Salle Parish (Little Creek)—		
M. E. Andrews, Dean 5, 23-9n-1e	25	1612
Placid Oil Co., Haile 1, 32-9n-2e	165	2974
La Salle Parish (Olla)—		
Carter Oil Co., Sills B-1, 26-10n-2e	135	2335
Arkansas Fuel Oil Co., Tremont C-15, 34-10n-2e	115	2414
Tremont D-2, 33-10n-3e	..	....
Petersen Pet. Co., Cruse 1, 19-10n-3e	175	2383
La Salle Parish (Nebo)—		
H. L. Hunt, Goodpine A-27, 16-7n-3e	85	4360
La Salle Parish (South Olla)—		
Landreth Prod. Co., Tremont B-1, 14-9n-2e	*	3111
Placid Oil Co., Tremont 6, 23-9n-2e	*	3750
Ouachita Parish (Monroe)—		
Amalgamated Co., Cole 5, 7-19n-4e	33	2185

Michigan

Company, Well and Location	Init. Prod. Bbls.	Depth
Allegan County—		
H. C. Nelson, Engelsman 1, ne nw sw 4-4n-14w	*	756
Union Oil Co., Weist 1, se ne nw 2-4n-13w	45	1736
John McLean, Zerfas 3, sw se 10-4n-13w	25	1635
L. C. Sleep, Bridgeman 3, ne sw ne 29-1n-13w	20	1372
Arenac County—		
Pure Oil, Yenior 2, se se nw 22-19n-3e	300	2970
Ervin Major, Solomon 1, sw nw sw 24-19n-3e	200	2997
Gladwin County—		
E. W. Collin, Suter 1, ne se ne 33-20n-1w	*	3690
Isabella County—		
Belvidere Oil Co., Bandeen 1, se se nw 22-13n-5w	¶1.25	1268
Missaukee County—		
Twin Dr. Co., Gray 1, c se 6-22n-5w	*	1075
Osceola County—		
Gulf, Henry 1, ne ne nw 31-18n-10w	4000	3640
Ottawa County—		
Fisher-McCall, Cheyne 1, sw nw nw 2-6n-13w	*	1825
E. B. Strom, Hompe 1, sw ne nw 1-6n-13w	10	1907
Smith Pet. Co., Wasolowski 1, se sw sw 27-7n-13w	10	1839
Van Buren County—		
Borough, Inc., Wilmont 1, se ne ne 2-1s-14w	*	1332
W. S. Cook, Treen 1, ne ne nw 12-1s-14w	*	1285

Mississippi

Company, Well and Location	Init. Prod. Bbls.	Depth
Yazoo County (Tinsley Dome)—		
Amerada Pet. Corp., Stutts 2, 36-10n-3w	1225	5069
Woodruff 2, 7-10n-2w	240	5602
E. C. Johnston, Martin 1, 1-9n-3w	485	4847
Johnson Dr. Co., Stutts 2, 31-10n-2w	765	5085
Plains Prod. Co., Milner 4, 7-10n-2w	400	4908
Union Prod. Co., Stevens 20, 12-10n-3w	165	5328

Missouri

Company, Well and Location	Init. Prod. Bbls.	Depth
Ray County—		
R. L. Campbell et al, Rust 1, c nw nw 21-53n-26w	*	1295

Nebraska

Company, Well and Location	Init. Prod. Bbls.	Depth
Nemaha County—		
Bow & Arrow, Wrightman 1, c w½ sw nw 36-6n-14e	*	2580
Richardson County—		
Ohio, Selbeerson 1, c s½ s½ sw 17-1n-16e	2000	2324

New Mexico

Company, Well and Location	Init. Prod. Bbls.	Depth
Eddy County (Wildcats)—		
Grover Mann & Henry McNelly, Riggs 1, c ne ne 7-20s-30e	*	1591
Truett-Tallmadge et al, Rudahl 1, nec ne se 8-20s-24e	*	3005
Eddy County—		
Emperor Oil Co., Puckett 2-B, c se se 24-17s-31e	194	3956
Etz Oil Co., State 2-J, nwc se 16-17s-30e	180	2095
Premier Oil Co., Beeson 6-B, se nw se 27-17s-30e	246	3234
Otis A. Roberts et al, State 2, sw nw sw 19-17s-28e	48	508
Western Producers Co., Keeley 3-C, c ne nw 13-17s-29e	41	2578
Lea County (Arrowhead)—		
Gulf, State-Ramsey 10, c ne sw 35-21s-36e	117	3880
Ohio Oil, State-McDonald 23, ne sw se 13-22s-36e	432	3745
Lea County (Vacuum)—		
Texas Co., State 10-R, c se sw 1-18s-34e	1275	4698

New York

Company, Well and Location	Init. Prod. Bbls.	Depth
Allegany County—		
Vosburg Oil Co., Green farm, Bolivar	7	1436
Chas. J. Reeland, Rowley farm, Bolivar	16	1063
Sawyer & Martin, Wasson farm, Bolivar	8	1411
South Bolivar Oil Co., McKelvey farm, Bolivar	6	1376
Messer Oil Co., Shaner farm, Bolivar	10	1531
Miles farm, Bolivar	8	1467
Ebenezer Oil Co., Emerson farm, Scio	7	1062
Cretekos & Vossler Oil Co., Norton farm, Scio	5	1041
Helen Randall, Reid farm, Alma	12	1418
Bradley Prod. Corp., Duke farm, Alma	7	1520
L. H. Richardson et al, Scott farm, Alma	7	1560
Brown & McEnroe, Barnes farm, Alma	8	1283
McEbenwood Oil Co., Wm. Lynch farm, Andover	6	1375
Scio O. & G. Co., Fuller farm, Scio	6	874
Sloan & Zook, McDivitt farm, Bolivar	8	1371
Forest Oil Co., Ackerman farm, Bolivar	10	1379
Shaner & Dermitt, Wetherby farm, Bolivar	6	1327
Daggett Oil Co., Perry farm, Clarksville	5	1387
Otto Oil Co., Bartlett farm, Bolivar	5	1273
Frank Comstock, Lane farm, Clarksville	7	1384
R. B. Keller, Keller farm, Genessee	5	1278
WATER INTAKE WELLS		
Allegany County—		
Mountain Oil Co., Kilbury farm, Bolivar	..	1456
Brothers Oil Co., Crandall farm, Bolivar	..	1410
Andrews Bros., Minnum farm, Alma	..	1464
Wilbart Oil Co., McDermott farm, Bolivar	..	1263
Cousin Oil Co., Brandes farm, Willing	..	1341
L. H. Thornton et al, Cornwell farm, Willing	..	1248
Bliven Hill Oil Co., McEwen-Norton farm, Scio	..	954

Ohio

Company, Well and Location	Init. Prod. Bbls.	Depth
Ashland County—		
Cramer-Hoag, Acker 1	¶0.1 & 15	690
Athens County—		
Ohio Fuel, Wilson 5	¶0.45	976
C. W. Nuzum, Featherston 2	*	1026
Carroll County—		
Brendel Prod. Co., Tipton 1	¶0.03	5496
Cuyahoga County—		
Hoey-Cummings, Hudson 1	¶0.7	1823
Obermiller Bros., Balinko 1	¶0.7	2727
Guernsey County—		
Purdy, Hall 1	¶0.04	1681
Geo. Jewell, Ratcliffe 1	*	440
Holmes County—		
Ohio Fuel, Herman 1	*	4260
Knox County—		
Upham Gas, Workman 1	¶0.05	2760
Ohio Fuel, Beltz 1	¶0.3	2901
Licking County—		
Geo. Vandergrift, Conner 3	2	715
Dowler Oil, Moull 1	¶0.37	2383
Ohio Fuel, Van Tassel	¶0.3	2410
Medina County—		
Preston Oil, Billman 1	5½	472
Meigs County—		
Downie et al, Graham 1	¶0.05	736
Miller 1	¶0.13	673
Monroe County—		
Hersher & Newhart, Haas 1	*	1949
Noble County—		
F. W. Fassett et al, Leasure 3	4	319
Perry County—		
Preston Oil, Yarger 1	250	3373
Palm Oil, New Perry Coal 3	15	3337
Richland County—		
H. E. Perkins, McAuley 1	*	2671
Summit County—		
East Ohio Gas, Warner 1	¶0.4	4392
Tuscarawas County—		
Nat. Gas of W. Va., Sweavey 1	¶1.28	4669
Brendel Prod. Co., Angel 1	*	978
Washington County—		
H. J. Wenzel et al, Wenzel 1	2	1246
Burkhart et al, Hall 4	1	1122
Hall 1	1	1135
H. E. Smith, Schenkel Hrs. 1	*	1364
Wayne County—		
Ohio Fuel Gas, Wilson 1	*	1910
INPUT WELLS		
Medina County—		
Marine Tr. Co., Packard 0-76	..	446
Packard 0-53	..	431
Packard 0-75	..	458

PETROGRAPHIC AND PHYSICAL CHARACTERISTICS OF SANDS FROM SEVEN GULF COAST PRODUCING HORIZONS

By M. T. Halbouty, B.S., M.S.,
Merit Oil Corp.

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United States Well Completions—*Continued*

Oklahoma

Company, Well and Location	Init. Prod. Bbls.	Depth
Caddo County—		
Ohio, Surbeck 5, swc 2-5n-9w	572	4008
Continental Prod. Co., Wagner 3, sw ne nw sw 12-5n-9w	685	3936
Phillips, Garrison 5, ne nw sw ne 34-6n-10w	401	3375
Carter County—		
Burkheart & Campbell, Cox 1, sec nw 21-2s-2w	*	1710
Kyle, Daugherty 5, sw ne sw sw 17-4s-2w	413	2266
Gibson & Jennings, Herrell "A" 2, se nw sw nw 20-4s-2w	211	2097
Herrell 4, sw nw se nw 20-4s-2w	192	2145
Woodworth 1, sw ne sw nw 20-4s-2w	881	2095
Creek County—		
Mid-Continent, Bear 1, se se sw se 3-14s-7e	*	3993
Wilcox, Stephney 2, sw se nw 35-14n-7e (pb 2560)	¶1.0	3450
Shell, Linihan 4, nw se ne 31-15n-7e	44	4163
Jones Prod., Jones 5, ne se sw 32-15n-7e	332	2790
Jones 6, se sw sw 32-15n-7e	379	2881
Jones 7, sw nw sw 32-15n-7e	230	2879
Garvin County—		
Ohio, Feaster 1, nwc se 13-3n-1e	*	4401
Cox & Hamon, Partin 6, sw ne se 29-1n-3w	14	2549
Grady County—		
Little Nick Oil Co., McCaughtry 1, c nw nw 26-5n-8w	¶140.0	4381
Lincoln County—		
Elko, Rounsvall 1, nec sw 5-14n-5e	50	3527
Taber & Coleman, Sumicker 1, sec sw 32-15n-5e	*	3790
Muskogee County—		
Culbertson, Thompson 1-A, sw swc 3-14n-15e	*	1420
Okfuskee County—		
Phillips, Johnson 3, sw ne ne 11-11n-10e	133	3212
Okmulgee County—		
Wood, McKinney 2-A, sw nw ne 13-12n-12e	¶2.0	2039
Pittsburg County—		
Choctaw O. & G. Co., Harmon-Featherstone 1, c ne nw 24-7n-17e	¶3.5	2436
Pottawatomie County—		
Oils, Inc., Walker 3, ne se sw 9-5n-5e	1200	2461
Helmerich & Payne, School Land 1, nwc ne 16-7n-5e	466	4119
J. F. Smith, Booze 1-A, sw se se 31-8n-4e	*	4430
Atlantic, Merkle 2, nw sw ne 32-8n-5e	372	4338
Hall-Jordan, Blaine 1, ne nw nw 1-9n-3e	431	5235
Seminole County—		
Mid-Continent, Yarhola 1, sec 13-7n-7e	*	1517
Winona, Fish 2, sw nw ne 19-7n-8e	*	1513
Heller 1, nec 25-10n-7e	¶40.5	3572
Magnolia, Campbell-Reed 5, ne se ne sw 4-8n-7e	*	3300
Delaney, Coker 1, c ne nw 30-8n-7e	*	4295
Stephens County—		
Magnolia, Wilson 29, nw ne sw sw 1-2s-5w	10	442
Tillman County—		
I.T.I.O., Dickey 10, cel se nw nw 1-3s-19w	3012	4986

OLD WELLS DEEPENED

Carter County—		
Neustadt, Choate (20) 1, nw nwc 20-4s-2w (otd 2102)	579	2111
Creek County—		
Billingslea, Wayman 4, nw se nw 22-15n-8e (otd 3225)	*	3240
Oklahoma County—		
Sunray, State 10, ne nwc ne 27-12n-3w (otd 6464)	379	6652
Pottawatomie County—		
Carter, Canard 4, c n½ sw se 35-11n-6e (otd 4073)	35	4134
Stephens County—		
Skelly, Huston 1, sw sw ne nw 36-1s-5w (otd 514)	36	821

Pennsylvania

Bradford District—		
Mix Creek Oil Co., Fee	1	....
Messer Oil Corp., Redfield	1	....
J. P. Kervin, South Penn Oil Co.	1½	....
L. F. Kinley, Mantz	3	....
D. Y. M. Corp., No. E. Bing 466	1	....
T. H. Kervin No. 1, Kapp	1	....
Forest Oil Corp.	1	....
Forest Pet. Corp., 2 wells	2	....
Niagara Oil Corp., 6 wells	6	....
Bradford Tr. Co., 24 wells	24	....

WATER INTAKE WELLS

Penn Valley Crude Oil Co.	..	....
Forest Pet. Corp., 2 wells	..	....
Forest Oil Corp., 2 wells	..	....
Niagara Oil Corp., 2 wells	..	....

NEW YORK-PENN GAS FIELD

Belmont Quad. Dr. Corp., Steuben Co.	¶	....
C. E. Updegraff, Fee 2	*	....

MIDLAND DISTRICT

J. E. & H. M. Williams, Dougherty	½	....
Alum Rock Gas Co., Griswold	1	....
South Penn Oil Co., Smith & Grace	1	....
Ohio Oil Co., Carnegie-Illinois	¶	....

BUTLER-ARMSTRONG DISTRICT

Robert Marshall, Hays	2	....
Hilderbrand & Deiter, McBride	1	....

SOUTHWEST DISTRICT

Armstrong County—		
Equitable Gas, Carroll 4	¶0.03	3702
Fayette County—		
Nollem O. & G., Berkshire 1	¶0.28	2299
Greene County—		
Manufacturers Lt. & Ht., Ewings 1	¶0.03	2906
Jefferson County—		
T. W. Phillips, Huber Est. 1	¶0.07	3158

East Texas

Joiner Area—		
Oran Lowry et al, Haile 3	250	3592
Stanolind, Schuyler 8-A	360	3670
Schuyler 11-B	240	3669
Schuyler 12-B	250	3667
Kilgore Area—		
Ed Pace, Tr, Elder 8	1200	3570
C. R. Starnes et al, Money 48	1500	3756
Sun, Elder 12	2000	3550
John Wrather et al, I&GN Ry. 29-A	1500	3568
Longview Area—		
Lucey Pet. Co., Fisher 14	2000	3518
Rowan-Nichols Oil Co., Todd 6-B	3600	3710
Sklar Oil Corp., Magrill 2	960	3656
A. H. Tarver et al, Free 6	2200	3660
Free 7	2500	3660
Tide Water, Jones 17	1800	3670
Anderson County (Wildcat)—		
Cecil Stein et al, Davey-Royal 1	*	490
Cherokee County (Wildcat)—		
Bobby Manziel et al, Douglas 1	*	5216
Gregg County (Willow Springs)—		
Humble-Gulf, Horton-Dickson 2 (new oil pay)	60	7308
Union Prod. Co., Hays-Magnolia 2	¶70.0	7402
Freestone County (Wortham)—		
J. B. Daniel et al, Beall 1	22	2974
Houston County (Wildcat)—		
G. C. Dixon et al, Texas Long Leaf Lbr. 1	*	1415
Lone Star Gas Co.-Trinity Gas Corp., Bolton-Humble 1	*	5813
Navarro County (Corsicana-Powell)—		
W. H. Clements et al, Edens 3	*	368
Rusk County (New Salem)—		
Gordon C. Grasty et al, Kangerga 1	*	4086
Van Zandt County (Van)—		
G. B. Ray et al, Carter 1	374	2909
Wood County (Hawkins)—		
Humble, Dobbs 1 (21/100-ac)	444	4780
Moore 1-B (67.71-ac)	460	4783
Priddy 1 (45.4-ac)	461	4743
Smith, Adm. 1 (23/100-ac)	466	4658
T. P. Ry. Co. 1 (63½-ac)	405	4807
Rudco O&G Co., Cobb 1	499	4814
Marion County (Pine Island-Smithland)—		
A. H. Carpenter, Burr 2, M. G. Nall sur	10	2407
Panola County (Wildcat)—		
Crow Dr. Co. et al, Frost Lbr. Industries 1, Thos. Kelly sur	*	6347
Shelby County (Wildcat)—		
Paul Pewitt, Barton 1, J. S. Lacy sur	*	5502

North Texas

Archer County (Hull-Silk)—		
Helmerich & Payne, Shephard 8	*	3999
Archer County (Scotland)—		
Shell, Coleman 1-G	1504	5128
Archer County—		
H. S. Gray et al, Taylor 5	3	1625
Pet. Producers Co., King 10	52	1245
Young & Woody Dr. Co., Meade 7	*	968
Archer County (Wildcat)—		
C. C. Robertson et al, Winters 1	*	1132
Baylor County (Mabelle)—		
British-American O. P. Co., Turbeville 9	288	2508
Clay County (Antelope)—		
Shell, Henderson 12	825	3180
Clay County (Wildcat)—		
W. H. Metzner et al, Myers 1	*	1329
Clay County—		
P. C. Burns et al, Patrick 1	*	1112
J. B. Cunningham et al, Boddy-Texaco 1	*	1405
Geo. Golden et al, 1st Texas Land Bank 2-B	*	1190
1st. Texas Land Bank 5	*	384
C. Y. Gorman et al, Taylor 3	30	1143
Harper & Knappenberger, Bilbrey 1	20	1179
A. P. Kouri et al, Cheeves 5	40	1141
Perkins & Cullum, Taylor 11-A	144	1060
Texas Co., Hansard 6	10	1101
Cooke County (Wildcat)—		
Moss Holmes et al, Coffee 1	*	2528
Cooke County—		
C. J. Bohner et al, Sicking 8	13	1609
Sicking 9	12	1624
H. C. DeLee et al, Rosson 1	14	1118
Kewanee Oil Co., Timmis 16-B	15	1620
Kingery Bros. et al, Johnson 11	15	1210
Metzner & McKee, Henscheidt 1-B	*	855
Thos. E. Nix et al, Flusche 2	17	798
Texas Co., Muerer 3	9	736
Trumter Pet. Corp., Stacey 8-B	17	776
Stacey 9-B	16	785
Jack County (Wildcats)—		
Alma Oil Co., Maxey 1	336	5387
B. C. Gilmore et al, McDonald 1	*	583
Jack County—		
B. C. Gilmore et al, B. Moore 2	6	429
Panhandle Ref. Co., Daniels-Eaton 7	30	3023
Three B Inv. Corp., Rhodes 2-C	360	3254
Montague County (Hults-Owens)—		
Wilcox O&G Co. (was G. & M. Dr. Co.), Bullard 1 (pb 6037)	45	6338
Montague County—		
J. M. Hawley et al, Bouldin-Crow 8	25	816
K. A. Keller et al, Rowland 1	*	1005
Texas Co., Gist 12-B	9	825
Throckmorton County—		
Coleman et al, McKeichan 1	10	687
Coleman & Freeland, Davis 1	*	723
W. Neustadt et al, Golden-Barden 1	8	671
Golden-Barden 2	8	649
McKeichan 2	12	624
Wichita County (KMA-Ellenberger)—		
Deep Oil Dev. Co., Bradley 1-E	1000	4320
Fain-McGaha Oil Corp., Griffin 1-C-E	768	4398
Shell-Phillips Pet. Co., Preston 17-A	†	4428
Griffin 24-E	1560	4354
Tide Water et al, Pettit 2-E	792	4451
Wichita County (KMA)—		
Bishop Oil Co., Waggoner Bros.-Keller 1-D	412	3885
Wichita County (Wildcat)—		
E. C. Harlin-Tom Medders, Hansard 1	*	1355
Wichita County—		
Coppock & Coleman, Warren 6	81	1763
Hanlon & Buchanan, Tom Burnett 4-AA	10	722
J. E. Turner et al, Fee 1	*	485
O. M. Shaner et al, Waggoner Est. 5-B	8	357
Waggoner Est. 6-B	*	522
Wolf & Hull, Daume 5	10	698
Wilbarger County (Fargo)—		
Amerada, Harrell-Magnolia 2	864	3953
Wilbarger County—		
Paradise Oil Co., Waggoner Est. 5-A	120	1803
Young County (Wildcats)—		
F. E. Butler et al, Ward 1	*	603
Hayden Farmer et al, Boone 1	*	608
D. B. Holland et al, Lisle 1	*	803
Young County—		
F. J. Albrittain et al, Perkins 8	*	848
Burma Pet. Co., Dunigan 7	*	977
Christie Bros., Craig-Allar Co. 1-D	*	3488
S. H. Fagadau et al, Guinn-Texaco 1	528	2805
Thos. D. Humphrey, Williamson 1 (new pay) (pb 5035)	896	5246
S. M. Parker et al, Luton 1	*	729

Texas Gulf Coast

Brazoria County (Danbury)—		
Humble, Bassett Blakely 4	18	4480
Brazoria County (W. Columbia)—		
Texas Co., Phillips 24	391	5687
Chambers County (Barbers Hill)—		
Texas Gulf, Barber B-5	120	4744
Kirby B-24	181	3889
Chambers County (Red Fish Reef)—		
Humble, Galveston Bay State 21-B	147	8710
Galveston County (League City)—		
Phillips, Stewart Title 5	*	10,410
Harris County (Humble)—		
Wilson O. Co., Holmes 7	148	1163
Harris County (Tomball)—		
Humble, Martens 8	176	5560
Jefferson County (Fannett)—		
Gulf, Bordages 12-A	*	8420
Liberty County—		
W. P. Henry, Stoesser 1	*	8647
Liberty County (Hardin)—		
J. R. Nowery, Humphreys 3	165	7648
Matagorda County (Hamman)—		
Atlantic, Steinmeyer 1	404	9248
Orange County (Port Neches)—		
Texas Co., Polk B-10	312	5495
Wharton County (Boling)—		
J. C. Van Wagner, Fojtek 1	51	3755
Wharton County (Hillje)—		
Texas Co., Orsak 2	72	5240

United States Well Completions—*Continued*

Southwest Texas

CORPUS CHRISTI DISTRICT

Company, Well and Location	Init. Prod. Bbls.	Depth
Bee County (Pettus)—		
Union, Ray 57	99	3975
Brooks County (Kelsey)—		
Magnolia, State-Marshall 10	820	4747
Colorado County (Garwood)—		
W. R. Davis, Brownson 2-A	650	6144
Jackson County (Cordele)—		
Crown Central, Foust 6	150	2792
Forst & Dunnam, Pressley 3	*	2755
Jackson County (Ganado)—		
W. V. Bowles, Niebuhr 1, outpost	*	6680
Jackson County (LaWard)—		
Humble, Egg 2	250	6004
Mauritz 4-B	1100	5230
Jackson County (Lolita)—		
W. L. Goldston, M. P. R. R. 5	500	5974
Skelly, Mitchell 4	500	5306
Jackson County (West Ranch)—		
Magnolia, West 150-A	650	5522
West 166-A	550	5783
West 167-A	800	5775
West 169-A	750	5560
West 171-A	800	5760
West 172-A	450	5546
West 175-A	750	5108
Jackson County (West Ganado)—		
Pure, Cravens 1	350	5223
Jackson County (Wildcat)—		
Lonnie, Glasscock, Carsten 1	*	6215
Jim Wells County (Alfred)—		
Lewis, Adams 1-A	*	3380
Jim Wells County (Ben Bolt)—		
Bridwell, Hoffman 4-C	750	5218
Jim Wells County (Clark-Muil)—		
Gravis & Doran, Clark 2	*	5752
Jim Wells County (LaGloria)—		
LaGloria, Unit 14, dual completions	¶200.0 &	6900
Jim Wells County (Premont)—		
McCartney, Isham 1, new sand	90	3936
Jim Wells County (East Premont)—		
Magnolia, Seeligson 16	¶3.7 & 40	6626
Transwestern, Dunlap 2, extension, new sand	600	6796
Jim Wells County (Wildcats)—		
Magnolia, Laughlin 1	*	7094
Osborn et al, Almond 1	*	5169
Live Oak County (White Creek)—		
Coquat, Goad 4-A	24	1512
Nueces County (Agua Dulce)—		
Hawn & Pan American, Wofford et al 1	525	7075
Shields, Schulz 2	650	6505
Stanolind, Weinert 2	525	6472
Texon, Austin 4	550	7015
Nueces County (Clara Driscoll)—		
E. A. Graham, Gandy 2	250	6003
Nueces County (South Clara Driscoll)—		
Magnolia, Johnson 9 (3rd hole)	*	6864
Texas Richardson 3	*	5652
Texas Conservative, Hule 5	125	5450
Nueces County (Minnie Bock)—		
Windsor, Parr 2	66	3840
Nueces County (East White Point)—		
W. R. R., State 7 (973)	450	5630
Refugio County (Refugio)—		
Hewitt and Dougherty, Clarkson 1	150	6380
San Patricio County (Midway)—		
Boynkin et al, Scrivener 1, extension	150	6540
Stanolind, Ivey 3	*	6086
San Patricio County (Plymouth)—		
Pantex, Chiltipin Creek 4	550	6557
Victoria County (Coletto Creek)—		
Averill & Cox, Terrell 4-A	40	2849
Victoria (North McFaddin)—		
Gulf, Noble 1-B, opens new sand	300	5864

OLD WELLS DEEPENED

Jackson County (Ganado)—		
Texas, Mauritz 3-A (otd 5108)	75	6550

SAN ANTONIO DISTRICT

Bexar County (Wildcat)—		
J. K. Lewis, Schroeder 1	†	1048
Bexar County (Black Hills)—		
Joe Noake, Minnie Stidham 1	*	1239
Bexar County (Gas Ridge)—		
Southwest, Covell 19	2	450
Travis County (Wildcat)—		
George Gage, Linz 1	*	1290

LAREDO DISTRICT

Duval County (Casa Blanca)—		
Magnolia, Duval 4-88	*	1165
Texas, Duval 45	20	1042
Duval County (Hoffman)—		
Cox & Hamon, Casas 3	*	3310
Casas 4	*	3220
Duval County (Kreis)—		
Osborn, Kreis 2	*	3223
Duvall County (Lundell)—		
Government Wells, Lundell 50	¶1.4	1545
Duval County (Wildcat)—		
Jack Rayzor, DuWell 1	*	4706
Jim Hogg County (Manila)—		
Magnolia, Merchants 51	¶1.3	2547
Merchants 52	50	2557
Jim Hogg County (Holbein)—		
Guy Davis, McLean 2-A	23	2807
Starr County (Rincon)—		
Continental, Slick 28-A	450	4230
Slick 98-B	200	4110
Slick 99-B	350	4080
Slick 2-E	*	4178
Starr County (Sun)—		
Sun, Speer 9-B	*	4891
Starr County (Wildcats)—		
Sun, Hall 1	¶1.04	5478
C. Thompson, Kelsey Bass 1	*	4818
Webb County (Killam)—		
Killam, Garcia-Villareal 11	71	2054
Garcia-Villareal 12	70	2 50
Garcia 14	93	2053
Garcia 15	61	2064
Webb County (Wildcat)—		
Magnolia, Hamilton 1-A	*	9197
Zapata County (Charco Redondo)—		
McCollum Oil Co., Gutierrez 1	1	306
Gutierrez 2	1	317
Gutierrez 3	2	280
Gutierrez 4	2	297
Gutierrez 5	2	328
Gutierrez 6	1	308
Gutierrez 7	1	313
Gutierrez 8	2	338
Gutierrez 10	1	330
Gutierrez 12	2	274
Gutierrez 17	1	274
Gutierrez 19	2	300
Zapata County (Glen)—		
Jay Simmons, Yeager-Strohman 7	*	2257

Texas Panhandle

Carson County—		
Cities Service, Fields 4	302	3260
Perkins & Prothro Co., Burnett 11	34	3057
Gray County—		
Coronado Oil Co., Davidson 2	386	3076
Cree & Hoover, Griffith-Davidson 1	472	3010
E. J. Dunigan et al, Luginbyhl 2	†	2050
J. L. McMahon et al, Lovett 1	291	2928
Pampa Prod. Co., Harra 9	27	3211
Harrah 10	28	3224
Skelly Oil, Schafer 125	256	3271
Hutchinson County—		
J. Gordon Burch et al, Weatherly 2	91	3091
J. M. Huber Corp., Weatherly 15	315	2873
Kewanee Oil Co., Lewis 56	234	2978
Phillips Pet. Co., Cockrell 69	183	2976
Stanolind, Watkins 26-A	302	3011
Moore County—		
Magnolia, Brittian 7	¶215.0	3060

West Texas

Andrews County (Wildcats)—		
Magnolia, Ralph 1	*	6434
T. P. Coal & Oil Co.-Seaboard, Midland Farms 1-C	*	4955
Cochran County (Slaughter)—		
Devonian Oil Co. et al, Duggan 8-A-12	728	5064
Honolulu Oil Corp., Igoe-Smith 6	958	4995
Geo. P. Livermore, Inc., Boyd-Texaco 4	1016	5068
Crane County (Dune)—		
Atlantic Ref., University 1-B-17	38	3304
Crane County (Gulf-McElroy)—		
Gulf, McElroy 247	46	3034
Crane County (Sand Hills Deep)—		
American Liberty Oil et al, Tubb 12	10,327	5761
Crane County (Sand Hills)—		
Humble, Tubb 56	2144	4538
Crockett County (Soma-Noelke)—		
M. & M. Prod. Co., Noelke 1-E	3192	1225
Crockett County (Wildcat)—		
Bolsa Chica Oil, Noelke 1	*	1638
Ector County (Foster)—		
Arrow Dr. Co., Johnson-I. T. I. O. 2	244	4208
I. T. I. O. Co., Johnson 1-C	67	4162
Sunray Oil, Johnson-Phillips 3-J	935	4290
Ector County (Goldsmith)—		
American-Maracaibo Co., Scharbauer 5-B	670	4180
Cities Service, Cummins 8-B	927	4275
Gulf, Goldsmith 361	517	4203
Ector County (North Cowden)—		
Atlantic Ref., Wight 2-B	63	4210
Barnsdall, Smith 22	795	4320
Carl B. King Dr. Co.-Holt-Landreth 5-B	434	4338
Ector County (Wildcat)—		
M. D. O'Quinn et al, T. P. Land Trust 1	*	1435
Gaines County (Cedar Lake)—		
Stanolind, Bremont 4	691	4761
Rayner 3	548	4845
Gaines County (Seminole)—		
Magnolia-Atlantic, H. & J. 12-217	303	5327
Hockley County (Slaughter)—		
Honolulu Oil Corp., Mallet 6-B-25	763	4990
Magnolia, Mallet 7-G	1016	5038
Sid W. Richardson et al, Slaughter 7	464	4970
Skelly, Lincoln 2	1292	5005
Stanolind, Slaughter 15-A	1314	5030
Slaughter 22-B	1488	5035
Texas Co., Mallet 3-B	1078	5005
Mallet 5-E	1325	5030
Slaughter 17 (6219-ac)	1419	5000
Slaughter 19 (6219-ac)	969	5005
Uscan Dr. Co., Watkins 1	276	4967
Howard County—		
FHE Oil Co., Dodge 5	286	2880
Sinclair Prairie, Dodge 69	95	2800
Mitchell County (Wildcat)—		
C. E. Casebolt et al, Franklin 1	*	3248
Pecos County (Abell)—		
Geo. T. Abell et al, Rixse 1 (pb 5600)	83	5043
Stanolind, Crockett 2	1596	5157
Waber 1	1526	5317
Pecos County (Wildcat)—		
Stanolind, Conry-Davis (pb 3815)	346	5745
Pecos County (Walker)—		
Cardinal Oil Co., White-Baker 1-J	86	2150
Scurry County (Sharon)—		
Coffield & Guthrie, Burney 1	270	2440
Stonewall County (Boyd)—		
Hunter-Roberts-Shoults, Boyd 1	*	4757
Ward County—		
Gulf, Estes 147	1326	2691
O'Brien 175	88	2694
Winkler County (Keystone)—		
Ralph Lowe et al, Zachary-Atlantic 2	545	3290
J. R. Sharp et al, Jenkins-Gulf 5	298	3367
Sam Weiner et al, Jenkins-Conoco 8	183	3400
Yoakum County (Wasson)—		
Aloco Oil Co., Miller-Texaco 15-A	853	5202
Drl. & Explor. Co., Roberts-Shell 1-B	199	5240
North Shore Corp., Bennett-Humble 6	822	5268
Skelly, Comer 3	446	5220

OLD WELLS DEEPENED

Yoakum County (Wasson)—		
Continental, Stevens 1 (otd 5047)	756	5150

West Central Texas

Brown County (Wildcat)—		
Frank L. Walker et al, Cox-McInnis 1	*	821
Callahan County (Wildcats)—		
Wm. D. Austin et al, Jackson 1	*	1210
F. E. McCreedy et al, Kelton 1	*	828
Coleman County—		
Anzac Oil Corp., Morris 2-F	285	2207
Robt. McKissick et al, Morris 10-A	87	3545
Eastland County (Wildcats)—		
Sims Dr. Co., Vernon 1	*	1560
Thomason & Heydrick, Beal 1	*	610
Jones County—		
Butler-Horne Dr. Co.-U. L. Miller, Linderman 1	271	1923
Hedrick Oil Co., Akard 2-E	232	2137
Humble, Huddleston 1-C	786	3020
Jones County (Wildcat)—		
C. J. Kleiner et al, Jackson 1	*	2238
Shackelford County (Wildcat)—		
E. M. DeLoach et al, Cook 1	*	1450
Shackelford County—		
Daniels & Pardue, Davis 17	94	1596

West Virginia

Braxton County—		
Pitts. & W. Va., Farmers & Citizens Bank 7820	*	1956
Calhoun County—		
Hope Nat. Gas, Knotts 8546	¶0.25	1748
Hopkins 8549	¶0.23	1853
Clay County—		
Reed-Wheeler-Young, Goshorn Hrs. 23	*	1310
Kanawha County—		
United Fuel Gas, Jones 5004	¶0.52	5216
Lewis County—		
Hope Nat. Gas, Flesher 187	¶0.18	2208
Lincoln County—		
Russell Gas, Elkins 1	¶0.17	3697
Putnam County—		
Reishman O. & G., May 2	¶0.42	3575
Wayne County—		
Mullins Gas, Fee 1	¶0.92	1330

Wyoming

Niobrara County (Lance Creek)—		
Ohio Oil, Richards & Comstock 4, ne sw 32-36n-65w	10	5140

OLD WELLS DEEPENED

Niobrara County (Lance Creek)—		
Ohio Oil, Converse Sheep Co. 6, sw se 32-36n-65w (otd 5317)	1240	5456
Stanolind, 38D, s cne nw ne 25-40n-79w (otd 2398)	100	2904

WILDCAT REPORT
New Starts and Completions

ARKANSAS
FIRST REPORTS

Columbia County—L. L. Prock et al's Young 1, c ne se 21-15-21, rig.

Clark County—Coker & Grieves' Williams 2, ne ne 7-11-19, dr.

CALIFORNIA
FIRST REPORTS

Kern County—A. N. Macrate's Haberfelde 1, sec 32-29-26, lcn, McClung area. Richfield's West Mountain View 1, sec 16-30-28, lcn, Northwest Mountain View area.

Los Angeles County—Hathaway Co.'s Ram 2, sec 31-5-17, lcn, Castaic area. Ohio Oil Co.'s Vasquez 1, sec 17-4-17, lcn, Castaic area. Standard's Sepulveda 1, sec 17-4-17, lcn, Castaic area. Kenneth Oil Prod. Co.'s Shepherd-Roy 1, sec 34-4-15, rig, Newhall area.

Tulare County—Trico O. & G. Co.'s Seymour-Bolz 1, sec 20-24-23, lcn, Trico area.

COMPLETIONS

Los Angeles County—Texas Co.'s Whitnah 1, sec 14-3-16, td 4999 ft, Mint Canyon about 4400 ft, salt water, trace oil, perf 3540-3648 ft, abnd, Newhall area. Western Gulf Oil Co.'s Lechler 2, sec 31-5-17, td 7178 ft, plugged 6940 ft, sand 6889-6940 ft, 116 bbls 33.4-gr, cutting 0.4 percent, 9/64-in bean, new field, Castaic area.

GEORGIA
COMPLETION

Clinch County—Georgia Resources, Ins., Gillican 1, 12th Land dist (unsectionalized), abnd 1501 ft.

ILLINOIS
FIRST REPORTS

Bond County—Ripley-Dome Syn.'s Twidwell 1, nw se ne sw 21-4n-4w, lcn.

Champaign County—Carl Robinson's Springer 1, c nw nw sw 18-22n-8e, lcn.

Clay County—Pure's Moseley "B" 3, c w½ nw sw 4-2n-8e, dr.

Clinton County—Dean Roland et al's Deters 1, ne sw ne 11-2n-3w, lcn.

Effingham County—Albert Day's Hague 1, nw nw sw 34-9n-4e, dr.

Franklin County—Oil Carriers, Inc.'s Wayman 1, se nw sw 1-6s-2e, dr. D. Margrave's Bethel Church 1, nw nw ne sw 1-7s-2e, dr.

Gallatin County—Clay S. Wilson's Rogers 1, nw ne nw 16-8s-8e, dr. Crum & Turner's Muenstreman 1, sw nw ne 19-9s-8e, dr.

Hamilton County—Shell's Ventrea 1, sw sw se 12-6s-5e, dr. Texas' Johnson 1, c w½ se nw 22-6s-6e, lcn.

Hardin County—Todd et al's Porter 1, sw se sw 35-11s-9e, lcn.

Madison County—Alch & Carroll's Wrinkel 1, sw ne nw 33-5n-6w, dr.

Richland County—R. Weiner's Carroll Smith 1, c w½ ne nw 5-2n-9e, lcn.

Saline County—Compton et al's Hudgins 1, ne ne se 22-7s-5e, dr.

Shelby County—National Pet. Co.'s Montooth 1, se se se 2-9n-2e, lcn, National Pet. Co.'s Bilyere 1, se se nw 26-11n-2e, comp.

Wabash County—Hayes' Zimmerman 1, nw nw se 36-1n-13w, dr. Niagra Oil Co.'s Frazier 1, sw nw ne se 30-2n-12w, dr.

Wayne County—Pure's Marshall "A" 1, c w½ sw nw 16-1s-8e, lcn.

White County—Angle & Angle's Reinwald et al 1, nw nw nw 25-4s-9e, dr.

COMPLETIONS

Bond County—Oil Prod. Synd.'s Dixon 1, se nw sw 8-5n-4w, abnd 675 ft.

Clark County—Zink et al's Tyler 1, se se ne 23-12n-14w, abnd 291 ft.

Clay County—Kilpatrick's Irwin 1, nw sw nw 5-5n-5e, abnd 2560 ft.

Fayette County—Bremo Dev. Co.'s Mahan 1, se sw nw 3-5n-3e, abnd 2010 ft.

Hamilton County—Jack Chevigny's Phillips 1, sw nw sw 26-6s-6e, South Hoodville disc Aux Vases 3053-6 & 3078-87 ft, td 3190 ft, pb 3145 ft, 53 bbls oil, 55 bbls water.

Jefferson County—Weiser Oil's Hoyt Hrs. 1, ne ne nw 3-1s-1e, abnd 2180 ft.

Montgomery County—H. C. Detrick's Banes 1, nw ne se 20-10n-2w, abnd 2528 ft.

Shelby County—Rose & Durbin's Flenner 1, sw sw se 9-10n-4e, abnd 2055 ft. National Pet.'s Bilyeu 1, se se nw 26-11n-2e, abnd 1843 ft. Ilson-Dr.'s Atkinson 1, c e½ se se 12-13n-3e, abnd 2992 ft.

Wabash County—L. E. Kennedy et al's Carson 1, s½ sw se ne 16-1s-12w, new pool, pay 2092-2112 ft, td 2401 ft, 30 bbls oil, 60 bbls water.

White County—Ryan Oil et al's Lamont 1, ne sw sw 33-3s-10e, abnd 3211 ft. Roche-Boyles & Buchanan's Groff 1, c e½ se sw 35-3s-10e, abnd 3203 ft. Arrow Dr.'s Lomas 1, sw nw sw 14-4s-14w, abnd 3035 ft. Bruce Martin et al's Williamson 1, c s½ sw sw 19-5s-9e, abnd 3312 ft. Spillers et al's Holderby 1, sw ne nw 35-5s-9e, abnd 3221 ft. Joe Dawson's Rodenheig 1, ne se ne 11-6s-10e, abnd 3106 ft.

INDIANA
FIRST REPORTS

Gibson County—Sylvester's Potts 1, c w½ sw sw 24-1n-10w, lcn. Warren & Bradshaw's Reavis 1, sw nw ne 24-2s-10w, lcn.

Orange County—U. S. Oil Co.'s Willyard 1, sw nw ne sw 33-1n-1w, dr.

Posey County—Cherry-Kidd's Ford 1, sw se sw nw 34-4s-13w, lcn.

Spencer County—Lawton et al's Payton 1, nw nw se 32-7s-7w, lcn.

COMPLETIONS

Hamilton County—E. P. Anderson's Gentry 1, c ne se 32-20n-6e, abnd 925 ft.

Parke County—H. N. Oakley's Montgomery 1, c n½ n½ nw 20-14n-8w, abnd 2466 ft.

KANSAS
FIRST REPORTS

Ellis County—Darby et al's Dreiling 1, sec nw 28-13-17w, dr.

Kiowa County—August Ponath et al Estate 1, nwc ne 22-30-19w, dr.

Norton County—Cities Service's Federal Farm 1, sec 15-4-23w, dr.

Russell County—Ruso Co. et al's Phillips 1, se ne ne 6-14-13w, dr. Central Pet. Co.'s Gustason 1, sec nw 14-15-12w, dr.

COMPLETIONS

Barton County—Armer & Black-Marshall Oil Co.'s Redetzke 1, c s½ sw nw 5-16-11w, 2 mi w Davidson pool, Anhydrite 657 ft, Ft. Riley 1625 ft, Topeka 2655 ft, Lansing 2988 ft, Conglomerate 3267 ft, Arbuckle 3285 ft, abnd 3337 ft. Helmerich & Payne et al's Roth 1, c w½ nw ne 30-19-11w, Ellinwood area, Anhydrite 610 ft, Ft. Riley 1650 ft, Topeka 2720 ft, Lansing 3093 ft, Sooy 3351 ft, Arbuckle 3377 ft, abnd 3404 ft.

Douglas County—J. B. Epperson et al's Howard 1, c se nw 25-13-19e, 4 mi s Lawrence, Lansing 90 ft, base Hertha 457 ft, Marmaton 600 ft, base Ft. Scott 712 ft, sso 722-29 ft in Peru sd, Squirrell 770 ft, Bartlesville 915 ft, Burgess 1170 ft, hfw, Mississippi 1197 ft, abnd 1205 ft.

Rooks County—Clay Bros. et al's Anderson 1, c w½ sw sw 28-9-16w, 2 mi sw Laton pool, Anhydrite 1275 ft, Topeka 2940 ft, Lansing 3195 ft, Conglomerate 3518 ft, Simpson 3531 ft, Simpson dolomite 3542 ft, Simpson sd 3563 ft, Arbuckle 3569 ft, abnd.

Stafford County—Stanolind O. & G. Co.'s Ahnert 1, c e½ ne se 26-22-13w, 3 mi s Drach pool, Anhydrite 721 ft, Lansing 3395 ft, Viola 3655 ft, Simpson 3689 ft, Arbuckle 3745 ft, td 3769 ft, pb 3761 ft, 2000 gals acid, 500 gals butane, 1440 bbls 28-gr.

KENTUCKY
FIRST REPORTS

Daviess County—Wilbur Wilkie et al's Westerfield 1, 25-N-31, dr.

Henderson County—Jack Cox's Allen 1, 6-P-26, dr. Walter Sargent et al's Fields 1, 24-Q-26, lcn.

COMPLETION

Hancock County—Burt Thompson et al's Jackson 1, 22-P-33, abnd 621 ft.

MICHIGAN
FIRST REPORTS

Allegan County—N. N. Smith's Skinner 1, se se se 35-1n-16w, rig. W. L. McClanahan's Mortensen 1, sw sw sw 36-1n-14w, dr.

Bay County—Kline Bagwell's Eigner 1, nw nw ne 3-13n-6e, rig.

Isabella County—Leonard & Rowmor's Whitney 1, c w nw se, 20-13n-3w, dr.

Roscommon County—Sun Oil Co.'s Bauman 1, c n sw ne 29-24n-1w, rig.

COMPLETIONS

Gladwin County—E. W. Collin's Suter 1, ne se ne 33-20n-1w, Dundee 3567 ft, abnd 3690 ft.

Missaukee County—Twin Dr. Co.'s Gray 1, c se 6-22n-5w, abnd 1075 ft.

NEW MEXICO
FIRST REPORTS

DeBaca County—Compton Oil Co.'s Overton 2, nec nw nw 1-1n-20e, lcn.

Lea County—Carl B. King Dr. Co. et al's State 1, c nw nw 16-11s-38e, lcn.

COMPLETIONS

Eddy County—Grover Mann & Henry McNelly's Riggs 1, c ne ne 7-20s-30e, elev 3202 ft, abnd 1591 ft. Truett & Tallmadge's Rudahl 1, nec ne se 8-20s-24e, elev 3830 ft, lime 2653 ft, abnd 3005 ft.

NORTH LOUISIANA
FIRST REPORTS

Vernon County—C. A. Kelsey's Mills 1, swc ne se 31-3n-11w, dk.

Grant Parish—E. N. Neelley's McAdams 1, ne se 19-6n-2e, mat.

NEBRASKA
FIRST REPORT

Harlan County—Veeder Sup. & Dev. Co. et al's Alter 1, c w½ sw nw 15-1n-18w, dr.

OKLAHOMA
FIRST REPORTS

Kay County—Zephyr Dr. Co.'s Gingerich 1, swc se 29-28n-1w, lcn.

Lincoln County—Summit Dr. Co.'s Tipton 1, nwc sw 23-15n-5e, dr.

Noble County—J. M. Henry et al's Schultz 1-A, ne sw ne 29-23n-1w, dr.

Pontotoc County—Hughes-Thomas et al's Johnson 1, swc se 26-4n-5e, dr.

Seminole County—A. Michaelson et al's Ashbrook 1, swc nw 34-10n-8e, dr.

COMPLETIONS

Jefferson County—Jack Johnson's Barrith 1, c sw se ne 14-6s-6w, 2 mi n Spring pool, bkn li 1530-42 ft, water 1920-2000 ft, abnd 2003 ft.

Le Flore County—Western Oklahoma O. & G. Co.'s Ward 1, sw nw sw nw 27-9n-24e, 8 mi w Spiro, gas disc, base Wapanucka 5558 ft, perf 5205-50 ft, 12,000,000 ft gas, 1000 lbs rock pres.

Okfuskee County—Shell's Keyes "B" 1, swc ne 22-11n-8e, 1½ mi nw North Cromwell pool, Inola 2908 ft, Bartlesville 2928 ft, Booch 3262 ft, Cromwell 3530 ft, Woodford 4057 ft, Misener 4089 ft, Hunton 4090 ft, Sylvan 4174 ft, Viola 4264 ft, Dense 4294 ft, first Wilcox 4310-14 ft, second Wilcox 4335 ft, td 4371 ft, pb 4235 ft, perf 2 holes 4060-61 ft, 23 holes 4128-50 ft, 17 holes 4128-45 ft, 2000 gals acid, 1482 bbls.

Pottawatomie County—C. W. Sharpe et al's Billington 1, nw se se 21-9n-4e, East Tecumseh pool disc, Belle City 2076 ft, Hogshooter 2540 ft, Checkerboard 3698 ft, Woodford 4225 ft, Hunton 4345 ft, Sylvan 4400 ft, Viola 4490 ft, Dense 4550 ft, Dolomite 4585 ft, Wilcox 4636 ft, td 4640 ft, pb 4597 ft, perf 161 holes 4500-40 ft, 5000 gals acid, 525 bbls 38-gr.

Wagner County—C. K. Minter et al's McGinniss 1, ne se ne 30-18n-17e, 2 mi sw McCracken pool, Dutcher 430-40 ft, Mississippi 590 ft, abnd 965 ft hard blk lime.

★ ★ ★ ★ ★ ★ ★ ★

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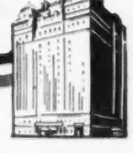

EAST TEXAS

FIRST REPORTS

Cherokee County—Bobby Manziel et al's Lumberlog Negro School 1, center 1-ac tr, John Vaughn sur, Larissa prospect, mim.

Houston County—T. C. Chisum & A. L. Porter's Austin 1, swc 107-ac tr, Frank Johnson sur, rur.

Navarro County—J. B. Daniel et al's Jones 1, north cor 100-ac tr, T. J. Jordan sur, 1 mi sw Bazette, rur.

Robertson County—Cox & Bentley's Kelly 1, J. M. Bustilla sur, 5½ mi e Hearne, 10-in 200 ft.

Rockwall County—J. W. Bibb &. W. R. Pankey's Hartmer 1, swc 178-ac tr, W. Crabtree sur, mim.

Wood County—Bobby Manziel & Jack Dempsey's Holmes 1, sw cor sw 20-acres of T. J. Rusk sur, 2½ mi se Crow, rur. D. P. Powell et al's Miller & Markey 1, swc 59.9-ac tr & H. H. Edwards sur, dr 1620 ft.

Cass County—J. G. Strahan et al's Taylor 1, Howard Reams sur (3 mi se Kilgore), mat.

Harrison County—Bay Oil Corp.'s Bonner 1, L. B. Blankenship sur, (3 mi se Hallsville), mat.

COMPLETIONS

Anderson County—Cecil Stein et al's Davey-Royal 1, nwc of M. Rogers sur, abnd 490 ft.

Cherokee County—Bobby Manziel et al's Douglas 1, sec of 19-ac tr, J. W. Brock sur, Larissa pros, elev 548 ft, Pecan 3464 ft, Austin chalk 4561-4781 ft, abnd 5216 ft.

Gregg County—Humble & Gulf's Horton-Dickson 2, H. Frost sur, elev 265 ft, massive anhydrite 6195-6440 ft, Pettit pay 7250-7308 ft, 10,000 gals acid, 60 bbls 41-gr oil, 28,335/1 ratio, ½-in choke, first oil Willow Springs field.

Houston County—G. C. Dixon et al's Texas Long Leaf Lbr. 1, J. Chears sur, 5 mi w Lovelady, elev 290 ft, abnd 1415 ft.

Panola County—Crow Dr. Co. et al's Frost Lbr. Industries 1, Thomas Kelly sur, abnd 6347 ft.

Shelby County—Paul. Pewittl's Barton 1, J. S. Lacy sur, abnd 5502 ft.

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NORTH TEXAS

FIRST REPORTS

Archer County—Fain-McGaha Oil Corp.'s Weinzapfel 1, sw nw lot 22, blk 24, Clark-Plumb sur, lcn.

Clay County—Seitz-Comegys & Seitz, Inc.'s Dunn 1, south 126½-ac of 268-ac tr, R. R. Brown sur A-14, dr 1500 ft.

Cooke County—Paul Stevenson et al's Donald 1, T. B. Hardwick sur A-1599, sp. E. L. Wilson et al's Gwyn 1, swc H. Jennings sur A-531, dr 1200 ft.

Wilbarger County—FHE Oil Co.-Fleming-Kimbell Corp.'s Allison Bros. 1, swc tract in nw part H&TC sec 54, blk 12, mim 6500-ft test.

Young County—L. T. Burns et al's Jeffery 1, sw ne TE&L sec 47, mim for 5500-ft test.

COMPLETIONS

Archer County—Carroll C. Robertson et al's Winters 1, sw se lot 80, blk 4, Clark-Plumb sur, abnd 1132 ft.

Clay County—W. H. Metzner et al's Myers 1, east part se 100-ac tr, sec 48, E. Story sur, A-419, abnd 1329 ft.

Cooke County—Moss Holmes et al's Coffee 1, L. P. Tipton sur A-1608, abnd 2521 ft.

Jack County—Alma Oil Co.'s Maxey 1, nwc w½ S. P. Ry. sec 2, A-2233, 5 mi se Antelope, new pool, Bend 4430 ft, Marble Falls 4830 ft, Mississippian 5255-5392 ft, perf 5278-5320 ft, pumped and flowed 42 bbls 42-gr 3 hours. B. C. Gilmore et al's McDonald 1, north 200-ac tr, S. P. Ry. sec 1, A-583, abnd 583 ft.

Wichita County—E. C. Harlin-Tom Medders' Hansard 1, swc blk 48, Specht-McCutchin sur, abnd 1355 ft.

Young County—F. E. Butler et al's Ward 1, L. W. Ross sur A-1352, abnd 603 ft. Hayden Farmer et al's Boone 1, nec sw se BBB&C sec 1, A-34, abnd 608 ft. D. B. Holland et al's Lisle 1, nec of S-188-ac tr, TE&L sec 112, abnd 803 ft. Thos. D. Humphrey et al's Williamson 1, sec ne TE&L sec 601, Bend 3985 ft, Mississippian 4980 ft, Ellenberger 5165-5246 ft, pb 5039 ft, perf 140 shots 5000-35 ft, acidized and flowed 112 bbls oil 3 hrs, ¾-in choke, new deep pay Crooked Creek area.

TEXAS PANHANDLE

COMPLETION

Hemphill County—I. T. I. O.'s Wiggins 1, c w½ ne ne I&GN sec 55, blk 1, elev 2477 ft, abnd 4028 ft.

SOUTHWEST TEXAS

FIRST REPORTS

Bastrop County—Weigand Bros.' Carroll 2, Freeman Wilkinson sur, 3 mi w Red Rock testing 2450 ft. G. Zimmerman et al's McDonald 1, Baker sur, 6 mi w Bastrop, lcn.

Bee County—Hewitt and Dougherty's Ray 1, sur 3, 4 mi e of Beeville, lcn 5800-ft test. Heyser, Heard & Clardy's Heard 1, Tool sur, 1 mi s Heard fld, prep mi.

Bexar County—J. K. Lewis's Schroeder 2, Bust sur 37, replacement hole for junked No. 1, moving in.

Cameron County—Pure Oil's Garcia Land & Live Stock 4, 5 and 6, lcn for 3500-ft core tests 5 mi sw Pt. Isabel.

Duval County—Cox & Hamon's Milano 1, Sec 87, s Kreis fld, mo. Hiawatha's Parr 32, San Andres gr, east of North Sweden fld, cored saturated sand 4917-40 ft, coring 5200 ft, apparently new fld.

Jim Hogg County—Bruce Clardy's East 1, sur 53, 10 mi sw Hebbronville, lcn.

Karnes County—Clyde Echols' Newberry 2, Martinez sur, on Green prospect, lcn.

Lee County—John Camp's Hardin 1, Nantz lge, s portion of county, lcn.

Live Oak County—Rantex Oil Co.'s Hinnant 1, Quinn sur, 1 mi sw Largarto, lcn 6500-ft test.

Milam County—Charles Roesner's Kirk 1, Robertson sur, 4 mi w Rockdale, dr below 500 ft.

Starr County—Stewart's Downs Royalty 1, El Javali gr, 6½ mi nw Viboras, lcn 2500-ft test.

Webb County—D. J. Moss' Gilbert 1, sur 264, 9 mi n Bruni, lcn 2800-ft test.

Williamson County—Geo. Gage's Hansen 1, Byerly sur, 5 mi w Coupland, lcn. S. W. Kima's Stauffer 1, H. White sur, near Byersville, lcn.

COMPLETIONS

Bexar County—J. K. Lewis' Schroeder 1, Best sur, 11 mi e S. A., junked, ds stuck 1048 ft.

Duval County—Jack Rayzor's Duwell 1, 3 mi ne Fitzsimmons pool, abnd 4706 ft.

Jackson County—Lonnie Glasscock's Carsten 1, Menefee sur, abnd 6215 ft.

Jim Wells County—Joy McCartney's Isham 1, at Premont, new sand, 90.39 bbls open tubing, gas lift, tubing 0-75 lbs, casing 575 lbs, perf 3706-16 ft, gr 23, w 4 percent, no gas. Transwestern Oil Co.'s Dunlap 1, southeast East Premont fld, extension, new sand, 154 bbls 39.9-gr, 7/64-in ch, 1200 lbs tubing and casing pres, perf 6090-94 ft, gor 974-1. Magnolia's Laughlin 1, just ne disc Seelig fld, abnd 7094 ft. Osborn & Superior's Almond 1, 4 mi sw Alfred, abnd 5169 ft.

San Patricio County—Boynkin et al's Scrivener 1, extends 6000-ft sand at Midway 2 miles sw, 74 bbls 44-gr, 3/16-in ch, 1000 lbs tubing, 1050 lbs casing pres, perf 6074-78 ft, gor 10,000/1.

Starr County—Sun's Hall 1, sec 99, between Sun and North Rincon flds, may be new field or connection of areas, 1,042,000 ft gas, 5/32-in ch, 1610 lbs tubing, 1705 lbs casing pres, perf 4665-70 ft. Chrest Thompson et al's Bass 1, por 87, 5 mi e Rio Grande City, abnd 4818 ft.

Travis County—George Gage's Linz 1, Martin sur, abnd 1290 ft.

Victoria County—Gulf's Noble 1-B, new sand at North McFaddin 105.11 bpd 39-gr, ⅛-in 400 and 650 lbs tubing and casing pres, trace water, gor 625/1, sand 5859-64 ft.

Webb County—Magnolia's Hamilton 1-A, 15 mi nw Callaghan, abnd 9197 ft, plugged back, fresh water well 2460-85 ft.

TEXAS GULF COAST

FIRST REPORTS

Brazoria County—Pure's Smith 1, J. E. B. Austin sur, 9400 ft, w and little n Greenameyer 1, dry hole, w of Manor Lake, lcn 8500-ft test.

Fort Bend County—Mackhank Oil Co.'s Armstrong 1, Jas. Scott sur, 4000 ft e Boling fld prod, 623-ac Tide Water farmout, prep for 6000-ft test.

Lee County—Jno. F. Camp's Harden 1, Albert Nantz sur, just s Williamson County line, lcn 2250-ft test.

Liberty County—Marrs McLean's Pickett 1, Double Gum Bayou pros, sec 18, 1¾ mi sw Echols dry holes, lcn 8600-ft test.

Montgomery County — Glenn McCarty's Seyle 1, c s 40-ac of 130-ac tr, John Scott sur, w Magnolia, mi 8500-ft Wilcox test.

Tyler County—O. C. Garvey's Reid Est. 1, nw cor Emily Sanderson sur, w Hillister, lcn 7700-ft Wilcox test.

COMPLETION

Liberty County—Winston P. Henry's Stoesser 1, s end sec 115 H&TC sur, s Eastgate, sw in all Cockfield-Yegua sands cored, abnd 8647 ft.

WEST CENTRAL TEXAS

FIRST REPORTS

Comanche County—C. D. Lane et al's Eaves & Co. 1, c e½ ne sw E. T. Ry. sec 45, sp.

Jones County—Thos. D. Humphrey et al's Triplett 1, Jas. Goocher sur 199, dr 1010 ft.

COMPLETIONS

Brown County—Frank L. Walker et al's Cox-McInnis 1, Osborn Dalton sur 26, abnd 821 ft.

Callahan County—Wm. D. Austin et al's Jackson 1, C&M Ry. sec 2, abnd 1210 ft. F. E. McCreedy et al's Kelton 1, nw sw nw BBB&C sec 148, abnd 828 ft.

Eastland County—Sims Dr. Co.'s Vernon 1, nec H&TC sec 9, blk 2, abnd 1560 ft. Thomason & Heydrick's Beal 1, nwc sw se J. W. Clifton sur A-187, abnd 610 ft.

Jones County—Chas. J. Kleiner et al's Jackson 1, ne part 140-ac lse, Alex Thompson sur, elev 1679 ft, abnd hfw 2237-38 ft.

WEST TEXAS

FIRST REPORTS

Crockett County—Forest Dev. Corp.'s Shannon 1, swc Lot 20, League 2, Archer CSL sur, lcn. J. Silas Pittman et al's Parker 1, swc GC&SF sec 28, blk HH, lcn.

Motley County—Humble's Matador L&C Co. 1-D, c ne se sec 127, J. H. Gibson sur, lcn, Ordovician test.

Pecos County—Gulf-L. H. Wentz's Millar 1, swc H&GN sec 39, blk 11, mim for Ordovician test.

COMPLETIONS

Andrews County—Magnolia's Ralph 1, nec PSL sec 20, blk A-38, elev 3420 ft, anhydrite 1695 ft, Yates sand 3014 ft, Yates grains 3050 ft, abnd 6434 ft. Texas Pacific Coal & Oil Co.-Seaboard Oil Co.'s Midland Farms 1-C, c se se G&MMB&A sec 8, blk 41, T-1-N, elev 3001 ft, anhydrite 1940 ft, base salt 2890 ft, Yates 3010 ft, Grayburg lime 4640 ft, San Andres lime 4850 ft, abnd 4955 ft.

Crockett County—Bolsa Chica Oil Co.'s Noelke 1, nwc GC&SF sec 22, blk GG, elev 2433 ft, abnd hfw 1595-1638 ft.

Ector County—M. D. O'Quinn et al's TP Land Trust 1, near c se nw T&P sec 31, blk 44, T-3-S, elev 2850 ft, off structure, abnd 1435 ft.

Mitchell County—C. E. Casebolt et al's Franklin 1, nec nw T&P sec 50, blk 27, elev 2163 ft, lime 1330 ft, abnd 3248 ft.

Pecos County—Stanolind's Conry-Davis 1, center lot 8, H&GN sec 31, blk 9, new pool, elev 2376 ft, anhydrite 365 ft, Yates frosted grains 1140 ft, detrital 4815 ft, Ellenberger 4825 ft, pb from granite 5745 ft, to 3815 ft, perf 100 shots 3710-3810 ft (Tubbs member Permian), acidized, 346 bbls 35.8-gr oil initial ½-in tubing choke.

MEN IN THE INDUSTRY'S NEWS

J. H. GRANT, director of advertising and publicity for Houston Lighting & Power Company, has been named a vice president, and given additional duties of directing insurance matters and public and employe relations. He started with the company while a student at Rice institute, working with a tree-trimming crew; received his first regular job in the credit department, later worked in the sales department, and in 1930 was transferred to the advertising and publicity department. He was admitted to the bar in 1932 following graduation from Houston Law School.

W. E. STILES, former general manager for Associated Engineers, and J. Frank Purdum, exclusive agent for Engineering Laboratories in Texas and Louisiana, have organized the Subsurface Engineering Company with offices in Houston and Tulsa. The firm will specialize in reservoir engineering services, including subsurface pressures, subsurface samples, productivity index work, gas-oil ratio corrections, subsurface temperature surveys, and other production engineering and survey work.

A. V. BOURQUE, Tulsa, has been named executive secretary of a voluntary committee set up under the transportation division of the Advisory Commission to the Council of National Defense to obtain maximum use of tank cars during the present emergency. The first meeting of the committee was held in Chicago a week ago.

STAFFORD ROGERS, in the land department of Magnolia Petroleum Company at Wewoka, Oklahoma, has been transferred to Colorado City to scout the east portion of West Texas district, relieving Harry Smith, who has joined the Army.

OSCAR CHAMPION, West Texas geologist for Amerada Petroleum Corporation, resigned to become district geologist for Seaboard Oil Company, which has established a branch at Midland.

J. R. McCHESNEY, Nowata district foreman for The Pure Oil Company, has been named gas superintendent and stationed at the Tulsa office.

G. H. SUMMERS, field assistant in geophysics, for The Continental Oil Company, has been transferred from Bay City, Texas, to Edmond, Oklahoma.

RICHARD M. DAVIS, seismograph party chief for The Carter Oil Company, Tulsa, has been awarded a $500 prize by the central "coin-your-ideas" committee of Standard Oil Company of New Jersey. He invented a Duplicate Recording Method of Reflection Seismograph which, simultaneously from a single dynamite charge, makes two records for field and office. Previously, as many as three charges were required at each shot point.

E. T. CORBETT, West Texas district foreman, and J. B. Harvey, Houston, head of the tank department of Humble Pipe Line Company, were injured July 10 when their car was struck by a truck near Odessa, Texas. Corbett sustained a broken hip, and Harvey received internal injuries.

E. RUSSELL LLOYD, Midland, Texas, operator engaged in developing a shallow oil property in Mitchell County, is vice president of Mimosa Corporation, a new concern formed to operate in West Texas with headquarters at Midland. Miers C. Johnson is president, and William Y. Penn and O. E. Clendenen are secretary and treasurer, respectively.

CHESTER H. GEIGER, former scout for Louark Producing Company at El Dorado, Arkansas, before its consolidation with The Carter Oil Company, is now stationed at St. Elmo, Illinois, for the latter firm.

CLYDE H. PAPE, vice president of Selby Oil & Gas Company, Tulsa, has been named chairman of the general committee on arrangements for the annual meeting of the Independent Petroleum Association of America, to be held October 21-22 in Tulsa.

RICHARD HUGHES, geologist for several years with Burke-Greis Oil Corporation, Tulsa, is now with C. C. Cummings, Paul J. McIntyre and H. J. Sherman, oil producers with headquarters in Tulsa.

DR. WALTER B. JONES, Alabama state geologist, has entered military service as an engineer reserve officer, and has turned over his geological duties to his assistant, Dr. Stewart J. Lloyd.

C. M. BRYSON has resigned as superintendent, Illinois Division, Toronto Pipe Line Company. He had been stationed at Grayville, Illinois.

MACK ACKERMAN, drilling superintendent for Lupher Drilling Company past 14 years, has resigned to take a similar position with Weber Oil Company.

GUY H. WOODWARD, Stanolind Oil & Gas Company, Tulsa, has been appointed chairman of the 1941 Legal Advisory Committee to the Special Study Committee on Well Spacing and Allocation of Production of the American Petroleum Institute's Division of Production. Members of the committee are Rex G. Baker, Humble Oil & Refining Company, Houston; J. P. D'Artois, The Ohio Oil Company, Shreveport; Joe T. Dickerson, Shell Oil Company, Houston; Hiram M. Dow, Hervey, Dow, Hill & Hinkle, Roswell, New Mexico; Don Emery, Phillips Petroleum Company, Bartlesville; W. P. Z. German, Skelly Oil Company, Tulsa; R. E. Hardwicke, Hardwicke & Cheek, Fort Worth; George A. Hill, Jr., Houston Oil Company, of Texas, Houston; W. D. Jochems, Wichita and D. R. Knowlton, Phillips Petroleum Company, Bartlesville.

PAUL GRIFFIN, vice president and treasurer of Oklahoma Pipe Line Company, Tulsa, has been named president, succeeding W. R. Finney, who has been transferred to the New York headquarters of Standard Oil Company of New Jersey. Bruce Ramsey, director and general superintendent, has been named vice president.

Griffin joined the company in 1909 as clerk, was made secretary and a director in 1921, and became treasurer two years later. In 1930, he was named vice presi-

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See Page 1325 in COMPOSITE CATALOG, 1941

JUSTRITE MANUFACTURING CO.
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dent. Ramsey joined Oklahoma Pipe Line in 1910, serving as a gang pusher, connection foreman, district foreman, superintendent, and general superintendent. He was named a director in 1938.

T. B. LEECH has joined Bethlehem Supply Company, Tulsa, as manager of refinery sales, with headquarters at the company's Houston office. Associated with the oil industry for 25 years, Leech attended Colorado School of Mines, alternating as trainee at the West Tulsa plant of The Texas Company during out-of-school periods. He later did pipe line, production and refinery egnineering in Texas, Oklahoma and Kansas, and during that period supervised construction of one of the first all-welded lines in the Mid-Continent. For several years he was in charge of cracking plant development and operations, and as plant engineer for Kansas City Refining Company. In 1926, he joined the Tulsa staff of Southwestern Engineering Corporation as sales engineer, specializing in fractionation. He was later with Alco Products Division of American Locomotive Company, and Alcorn Combustion Company.

CHARLES W. FOWLER, JR., who has been with Y. P. F. of Argentina for the past two years, has returned to the United States on completion of two contracts. He will make his home in San Antonio.

CARL S. LEIDECKER, 61, president of the Bryson Oil & Gas Company and a resident of San Angelo, Texas, since 1925, was fatally injured July 13 in an auto accident near Midland.

FRANK D. SUTHERLAND, 58, with Hammond Gray Tank Company, Centralia, Illinois, died June 20. He started as a driller in Ohio and West Virginia, later becoming a salesman for The National Supply Company and Frick-Reid Supply Corporation in Ohio. He was with Bessemer Gas Engine Company before it became part of The Cooper-Bessemer Corporation, and recently was with Black, Sivalls & Bryson, Oklahoma City.

CLYDE STAPLETON and D. D. Bowersock have been named store manager and field salesman, respectively, of a new stored opened by The Bovaird Supply Company at 111 Main Street, Seminole. F. J. Robbins is Oklahoma district manager, with headquarters at Oklahoma City.

C. Stapleton

D. D. Bowersock

Petroleum Engineer, 26, desires employment in production work. Three years experience round-water Hydrology. Employed now by U. S. Geological Survey. Good record and references. Married.

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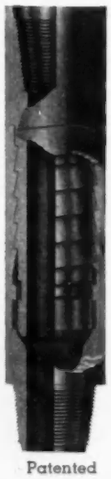

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Through Supply Stores Anywhere in U. S. A.

Squeaks from the Bull Wheel

Coming Up

Mary, is that young man there yet?
No, mother, but he's getting there.

Hollow

The stout lady on the scales was eagerly watched by two small boys. She dropped in her penny, but the scales were out of order and only registered 75 pounds.

"Gee whiz!" gasped one of the youngsters in amazement, "She's hollow!"

Wiser Than the Judge

An inebriate boarded the English railway train and spied a vacant seat. Stumbling toward it, he asked the other occupant to move over, a request which was reluctantly granted. The liquored one queried: "Say, aren't you the lord chief justice?"

Receiving no answer, he waited a bit and then repeated the question. The lord chief justice replied in the affirmative, with much reserve.

"Say, Mr. Justice, you think you know everything, but I know something you don't know. My wife is your wife's washerwoman and I'm wearing one of your undershirts."

Hidden Qualities

Among the many interesting expressions peculiar to the Scottish tongue is the word "flype," which means "turn inside out." And here's an amusing story embodying its use.

An estimable Scottish farmer got married, and soon after invited a friend to his house and introduced him to his new wife, who, if the truth must be told, was a person of remarkably plain appearance.

"What do you think o' her John?" he asked his friend, when the good lady had quitted the room.

"She's no' very bonnie!" was the candid reply.

"That's true," replied the husband, quite unembarrassed, "she's no muckle to look at, but she's a rale gude-hearted woman. Positeevly ugly outside, but a' that's lovely inside."

"Losh, man, Tam," said the friend gravely, "it's a peety ye couldna flype her!"

Good Start

Mamma Fly—I think our child is going to be a great success.

Poppa Fly—Yes, he doesn't seem to stick to anything.

On the Other Foot

"Sir, you you talk in your sleep?"

"No, sir, are you not aware that I am a clergyman? I talk in other people's."

Some Jump

The last sailor of the liberty party came dashing down the dock just as the last motor sailor returning to his ship had cast off from the pier. It was three or four yards from the dock, but the sailor decided to chance making it, and leaped. He landed in the boat, all right, but so hard that he slipped and struck the back of his head. For a minute he lay there stunned. When he came to again, the motor sailor was at least a hundred yards from shore. The sailor looked back, blinked, and exulted: "Boy, was that a jump!"

It Sometimes Happens

"Your son says he doesn't want to get married."

"Just wait till the wrong girl comes along."

Obliging

His bagpipe playing was the chief thing that mattered to him in life. One night, while he was strutting about the room, skirling for all he was worth, his wife attempted a mild protest.

"Jock," she said, "that's an awful noise you're making."

So Jock sat down and took off his boots.

Cause and Effect

The student was one of those lads short on knowledge, but long on resourcefulness. For many minutes the professor had been plying him with questions in an effort to break down his self-assurance, but all in vain.

"You have heard of cause and effect?"

"Oh, yes."

"Have you heard of effect coming before cause?"

"Indeed, yes."

With an ill-concealed look of triumph, the professor demanded, "Give me an example!"

"A barrow wheeled by a man."

Just Wasted

"How many coats of paint do you give a door?"

"Two, my boy."

"Then if you give it three coats, it would be an over-coat?"

"No, my lad, it would be a waste coat."

Fixing the Story

A preacher stopped at a fish market and said to the clerk: "Throw me a dozen of those mackerel—one by one."

"What for?"

"I've got to say I caught them and I can't lie about it."

Making Sense

"Isn't that expensive for a little pillow?"

"Well you see, ma'am, down is up."

Three Cheers for the Navy

"See that man standing on the bridge of the enemy's gunboat five miles away?"

"Ay, ay, sir."

"Let him have a 12-pounder right in the eye."

"Which eye, sir?"

Lost One

An ardent angler took a friend fishing. The friend knew nothing about the gentle art, but was provided with the necessary tackle and a comfortable seat on the bank of the stream. The experienced angler started fishing a few yards up the stream. Presently the novice said, "How much do those red things cost?"

"I suppose you mean the float," said the angler. "They cost about a quarter."

"Well, I owe you a quarter," said the novice. "The one you loaned me has sunk."

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No equipment around a drilling operation has an easy time of it. But the draw works — and especially the shafts — catch an extra dose of all-out hallelujah. What with the quick reversals at high speeds throwing heavy loads on them lightning fast first in one direction and then in the other, they've got to be plenty strong and plenty tough.

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Molybdenum Steels are making notable service records in all sorts of drilling equipment from crown blocks to bits. They are completely described in our book, "Molybdenum in Oil Production", which is free for the asking.

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NOTES FOR THE Equipment Buyer and User

Tubing Safety Valve

OTIS PRESSURE CONTROL, INC.

A tubing safety valve, designated Type C and designed to provide a positive and automatic subsurface shutoff the instant damage occurs to the tubing connections, regardless if this damage be caused by flow cutting or an outside impact, has been announced by Otis Pressure Control, Inc., Dallas. Used in surging wells, it is designed not to prematurely close during action of heading flows.

The tool is essentially a valve held in an open position by the compression of an adjustable coiled spring. The valve is actuated by a pressure differential across the valve stem, which necessarily must overcome the mechanical load introduced into the spring before the valve will close. Flow through the tool is limited to openings immediately below the valve and seat. A packing element around the valve stem forces all flow through these openings. As long as the surface choke is smaller than the combined openings through the safety valve, a negligible pressure drop is created across the valve stem. When the size of the surface choke, either because of cutting or outside damage, approaches that of the openings through the safety valve, a pressure drop is set up across the valve stem, causing the valve to snap closed.

Initial compression placed in the valve spring usually is around 500 pounds, but for wells with comparatively low flowing pressures 100 to 150 pounds may be used. Regulating is done in the field by adjusting nuts on the bottom of the valve stem to calculated position shown by a calibrated chart.

Once the tubing connections are damaged and the valve closed, all well pressure acts against the area of the valve seat to hold it closed until connections are repaired.

To reopen the safety valve, a special equalizing tool is run in the tubing on steel measuring line. This tool opens a small by-pass valve in the side of the safety valve, permitting pressures to equalize across safety valve and cause spring to force main valve open. Valve is run and pulled under pressure on steel measuring line.

Proportioner

Cochrane Corporation, 17 Street and Allegheny Avenue, Philadelphia, has issued Bulletin 3015 describing its electrically-operated chemical proportioner, designed for proportioning a number of individual chemicals to water conditioning systems in accordance with makeup requirements. The device employs a swing-pipe chemical proportioner controlled from an electric flow meter provided with contacts on the integrator train. When a predetermined quantity of fluid has passed through the meter orifice, the intergrator closes a contact in the electrical circuit, including a time-cycle relay. Time for which the proportioning motor is to run is controlled from a panel-front knob for each chemical.

Well Drilling

Caterpillar Tractor Company, Peoria, Illinois, has issued a booklet on "Speed and Economy in Oil Well Drilling," stressing use of the company's diesel engines. Its 12 pages portray many drilling operations, pointing out advantages in use of diesel power.

Air Hose

THE B. F. GOODRICH COMPANY

A lightweight air hose in ½- and ¾-inch sizes has been announced by The B. F. Goodrich Company, Akron, Ohio.

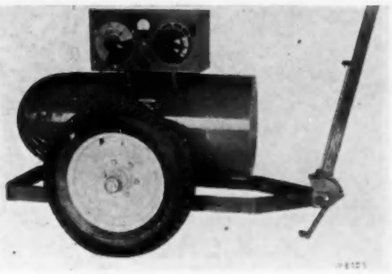
Designed to combine strength and efficiency with minimum weight and ease of handling, the ½-inch size can be bent to a 3-inch radius without collapsing or cutting off the air supply. Light gray in color and of two-braid construction, it is rated to withstand working pressures of 80 to 125 pounds.

The tube is of oil-resistant rubber, and is designed not to flake or clog tools. Yarn reinforcement affords a safety factor of five to one under a working pressure of 125 pounds. Golden ply insulation has been employed to assist in flexibility and resistance to kinking.

Welding Machine Trailer

THE LINCOLN ELECTRIC COMPANY

A 2-wheeled pneumatic-tired trailer for mounting arc welding machines to gain portability in shop, yard or on the road, has been announced by The Lincoln Electric Company, Cleveland.



Lincoln Trailer with Motor-Driven Unit

Designed for mounting either the company's SAE 200 to 600 ampere AC motor-driven unit, or Type SA 200 engine driven unit, the trailer can be used for road towing up to 30 miles an hour. It is of arc welded steel construction throughout.

Mounting is by four bolts in frame of trailer, which register with holes in lugs on the welding machine. Combination tow bar and standing support has a hand-operated ratchet arrangement for locking support arm in position. The unit measures 66 inches long, 42 inches wide, 16 inches high, and weighs 282 pounds. Tires are 16 x 5.50.

Instruments

Fischer & Porter Company, 19 County Line Road, Hatboro, Pennsylvania, has issued an 8-page catalog section, 50-A, on its electrically operated

WEIGHT INDICATOR POINTS
No longer can your driller simply ride the brake and forget about what's going on in the hole. So . . . since he's got to know weight, speed, pressure and torque to make hole the *right* way, why not give him the best instrument you can buy for drilling control?
With a Martin-Decker "Sealtite" —which is easy to install, is all sealed up against leaks, and requires no tinkering—your driller will have his facts right in front of him where he can see them—and he'll drill you a better well!
MARTIN-DECKER CORP. LONG BEACH, CALIF.

L. S. Hamer, Hamer Oil Tool Company president, is shown on the company's traveling exhibit at Long Beach. Ernest Dunn, company engineer, is at the rear.

rotameters for remote indicating, recording and integrating. The instrument employs several different types of transmitting systems, including mechanical, magnetic, electronic and inductive, selection depending on the size of the rotameter.

International Exposition Options Expire August 15

Space options granted exhibitors at the 1940 International Petroleum Exposition for the May 16 to 23, 1942, Tulsa oil show will expire August 15, William B. Way, general manager, said last week.

Exposition officials anticipated a rush on additional contracts within the next 30 days, with the number of exhibitors who have already signed contracts and taken up their options having now reached 75.

"About one-half of the companies now sending in contracts at the rate of from two to five each day are enclosing payment in full for their space for 1942," Way stated. About 175 companies have reserved nearly 58 percent of the available space.

The task of arranging space for new firms and for those in the 1940 show who asked for increased space will begin following the expiration of options on August 15, when all space not taken will be thrown open.

McConnell Describes Bahrein Isle Activities to Los Angeles Nomads

Phil McConnell, Bahrein Petroleum Company, who has recently returned from Bahrein Island, was the principal speaker at the July meeting of the Los Angeles chapter of Nomads. Motion pictures furnished by the Army, "The Army on Wheels" and "Wings of Steel," were shown by Sergeant J. P. Bergman.

Native life on Bahrein Island and the adjacent mainland was described by McConnell, who has spent a number of years in that territory. He was at the company camp and near the refinery when the Italians bombed that area, and witnessed the performance at close quarters. Between 90 and 100 bombs were dropped during the raid, but he said no damage was done except to two barbed wire fences.

Guests included were R. B. Block, International Petroleum Company, Ecuador; Clint Adams, U.B.O.T., Trinidad; A. W. Rothrock, Colombian Petroleum Company, Colombia; Carlos Ripamonte, Y.P.F., Argentina, and C. A. Ricks, Caribbean Petroleum, Maracaibo, Venezuela.

John B. Isaacs, Hughes Tool Company, has been named to associate membership in the chapter. His name was erroneously carried in the July 14 issue as "John P.," and identification given as Reed Roller Bit Company.

Traveling Exhibit Arranged By Hamer Oil Tool Company

Hamer Oil Tool Company, Long Beach, California, has arranged a traveling exhibit of its products which is currently on a 50,000-mile tour of United States oil areas.

Under the direction of Ernest Dunn, company engineer, the exhibit shows the company's products under actual working conditions, employing a pressure system equivalent to 8000 pounds cold water pressure.

The exhibit is mounted on a heavy duty truck, and is designed to roll up to a headquarters office, field warehouse, drilling rig or refinery for a working demonstration. It reached the Texas Gulf Coast this month, and later will go to fields in Louisiana, Arkansas, Oklahoma, Kansas, Illinois basin, and on to the East Coast refinery district before returning to the company's California headquarters.

John R. Riley and G. C. Ross Enter Illinois Equipment Field

John R. Riley and G. C. Ross, formerly of American Iron & Machine Works Company, Oklahoma City, have purchased Brauer Machine & Supply Company's shop at Clay City, Illinois, and have started operations under the name of Big Four Machine & Supply Company. The new company solicits general oil-field repair work in conjunction with distributorship of equipment. Riley and Ross were associated with American Iron & Machine for many years in sales capacities.

Hose

The B. F. Goodrich Company, Akron, Ohio, has issued a 4-page catalog section on its high-pressure hydraulic-control hose. It describes functions of the hose, use of the product, the description of manufacturing features. Commonly used and special sizes are listed in tables, as well as couplings, spring guards and adapter unions. A formula gives correct bending radii for various sizes.

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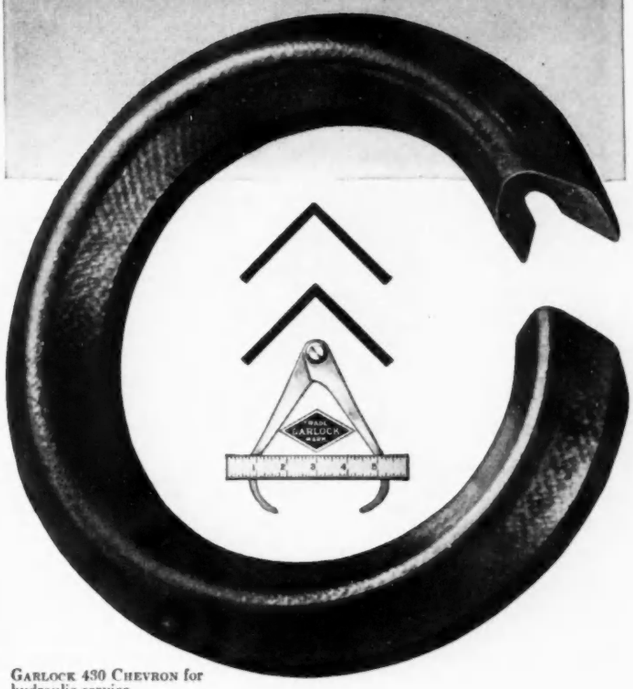

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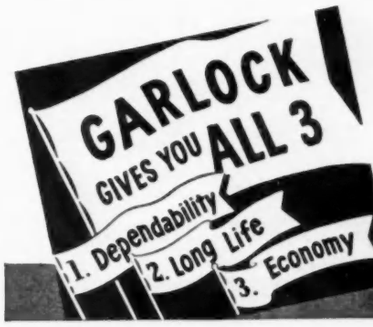

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